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ABSTRACT

Intended as a memorial to Robert G. Sidnell, this special issue contains articles about areas of music education which he promoted. In "The Dimensions of Research in Music Education," Sidnell concluded that music education research encompasses all humanistic disciplines as well as the behavioral and social sciences. James Carlsen, in "Framework for Research: An International Perspective," presents a taxonomy of instructional systems and research studies that examine theories under one or more components of each system. "Recent Research Pertaining to Psychomotor Skills in Music," by Steven Hedden, examines research published since 1978 concerning the relationship of motor skills to music education. Henry Cady analyzes how the meaning of a work of art develops in "The Problem of the Rational in Music," and Richard Colwell suggests that a person's educational philosophy is the most important dimension of teacher education in "Music Education and Philosophy." Assessing music education is examined by Thomas Tunks in "Evaluation in Music Education: The Value of Measurement/The Measurement of Value." The need for the expansion of music education research is considered by George Duerksen in "Research and Music Education: Needs for the Next Decade," while David Williams describes music expression as a social behavior in "Do Our Models for Music Research and Teaching Reflect Our Human Social Nature?" Kate Grieshaber considers the fundamental nature of rhythmic abilities in "Children's Rhythmic Tapping: A Critical Review of Research." (JHP)

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FEATURE ARTICLES

Prologue

As we all form and reform our opinions about music education, an ever-present consideration is our own assessment of the whole body of persons we know as "the profession." Of course, for each of us there is a unique set of significant personalities who constitute that professional body. Our own activities are directed, in part, by answers to questions about those personalities. "If I go to the convention, who will I see? Who will I talk with? Who will I learn from?" "Who will read this article? How will they react?" Or, "If I participate in this project or become a member of that committee, with whose reputation will my own become inextricably bound?" Even in deciding whether to pursue a career in music education, students consider not only "what" is music education, but perhaps more importantly, "who" is music education.

In the months following the death of Robert Sidnell, I have been reminded through literally dozens of letters and telephone conversations that he clearly is numbered among those who have made a lasting impact on the profession. Contributors to this issue of the *Bulletin*, which is dedicated to his memory, are among those who include Sidnell in their own sets of significant personalities. The articles herein, although not intended necessarily to reflect his views, represent a sample of topics in which he was most interested.

In reflecting on Sidnell's career, the widely-varied areas of his leadership and innovation come to mind first. One of his innovations was the formal, mid-program screening of music education undergraduates long before it was a widely-encouraged practice. As a leader he modeled theory, practice, and research in music education. The payoff for his effort was the many leaders in our profession whom he influenced. Then there was his long-standing membership on the Advisory Committee of the Council for Research in Music Education, starting in 1967; his central involvement in the Michigan Music Assessment in the early 1970's, which served as a model for other such efforts; and his book, *Building*

Instructional Programs in Music Education (1973), which provided an important synthesis of thinking from music, philosophy, history, psychology, and education. He was active with the Music Education Research Council of MENC; involved with others in the creation of the Special Research Interest Groups (SRIGs). His strong support of collaborative and cross-disciplinary efforts was exemplified by his role in the Ann Arbor Symposia, the inception of the journal, *Psychomusicology*, his co-authorship of a music theory text with composer/theorist H. Owen Reed, and a music fundamentals text with Charles McDermid.

Those who had direct contact with Sidnell remember other things about him — things at least as important as his more public contributions. He was intensely interested in models as tools for learning and expressing. Perhaps that accounts for his own effectiveness as a role model for his students. He viewed research not as an isolated practice or set of procedures and tools, but as a mentality — even a way of life, and not just for "researchers" but for everyone. He enjoyed recounting that his own decision to purchase a Volvo resulted from an informal survey of European taxi drivers. He was an outspoken promoter of theory-based research but at the same time he was strongly committed to the practical. In most any conversation he would find a way to ask, "so what?", usually disguised in other words. This question was consistent with his interest in the role of regional and community colleges, which was both the focus of his doctoral dissertation and, perhaps ironically, reflected in his position as Dean of Fine Arts at Stephen F. Austin State University in Nacogdoches, Texas in the final few years of his career.

The above notwithstanding, what endeared Robert Sidnell to students and close colleagues were his personal, human qualities — his willingness to risk . . . sharing his biases, joys, disappointments, even his faults. Across the 25 years of my own close association with Sid, I was not alone in savoring his moments of jazz piano improvising and his fond accounts of directing the Lutheran church choir; trips to Spain or Germany with his wife, Jo; visits with his daughters Jennifer and Pam; playing with model trains with his son, Chris; or even that dismal day when, as a beginning music teacher, he chose "Hark, Hark the Lark" for a group of surly adolescent boys to sing.

We all have the potential to make a lasting contribution to music education. Reviewing the wide range of professional and personal qualities that contributed to the influence of a leader such as Robert G. Sidnell may help us in taking stock of our own progress toward achieving more fully each of our own potentials.

Thomas W. Tunks
May 28, 1986

FEATURE ARTICLE

The Dimensions of Research In Music Education

Robert Sidnell

Problems for research in music education can encompass a scope which impinges on almost all of the humanistic disciplines as well as the behavioral and social sciences. Music is a form of human behavior. Music is nonexistent unless some form of participation by individuals or groups of individuals is evident. It is just this participation that becomes the object of music education research. Music education research is people centered. Properly so, for, "music nowadays whether we like it or not, is interwoven with the texture of our lives from morning till night."[1] Broadly conceived, music education research will investigate what man has done with music, what man is doing with music and what may be possible for him to do with music.

An Interdisciplinary View

Research findings from such disciplines as education, musicology, history, psychology, sociology, and anthropology are at times appropriate. Moreover, the methods of inquiry established as common practice for these disciplines are the methods of inquiry for research in music education. These research patterns are historical, descriptive, and experimental. Similarly, research methods and findings of the physical and biological sciences have pertinence. Studies which involve musical performance will need to use the stringent controls well known in scientific research if the inquiry involves acoustical considerations. At times findings of research in medical science, particularly in relation to physiology, have importance for music response and learning. Most germane to the process of music education are, of course, studies which involve the teaching and learning of music and those that focus on the materials of instruction (music). Nevertheless, research which borrows accepted techniques of inquiry and data from the above disciplines can contribute to the growing body of verifiable knowledge that identifies music education as a discipline. There is not, nor need there be a research method peculiar only to music education.

The researcher should be cognizant of the interdisciplinary nature of research in music education. Responsible research and its discoveries can bring about a broadening of music education. Human involvement with music is not esoteric phenomena. Many disciplines can and will contribute to a greater understanding of man and his use of music. The researcher who perceives music education in broad scope can approach research problems from a more informed base. There is great need for competent research workers in music education who are knowledgeable and comfortable with the techniques of inquiry which serve other disciplines.

The Types of Research

The classification of research problems in music education has taken two directions. Some writers classify by research method, others by the kind of problem under investigation. In 1953, Britton identified three types of music education research:

1. Scientific – "research employing quantitative techniques, those so successfully used in the physical sciences. Such research has eventuated in the production of numerous studies in comparative methodology, in the devising of a variety of aptitude and other tests . . . "

2. Historical – "The humanities point out that music is more an art than a science and that the same may be said regarding the teaching of music. Thus according to this school of thought, music education may expect to reap greater benefits from the study of its history than from quantitative analysis of its present structure . . . ."

3. Survey – ". . . eventuates in the production of field studies, which usually consist of descriptions of practice or programs of action; in the preparation of college courses of study, new textbooks and other materials of instruction; in the analysis of available materials or currently operating teacher studies dealing with such matters as the competencies necessary for teaching certain aspects of music, average salaries, interest inventories, achievement tests, and so forth."[2]

Morgan and Burmeister have identified six categories of research in music education. This classification allows for a somewhat sharper focus on the kinds of research techniques used.

1. Status Studies – "Facts are assembled and described in a status study without imposing measures of control. A variety of survey techniques are used where data are assembled from records or by the use of questionnaires, interviews and observations. The purpose

of a status study is to determine or define the status quo of the problem area under investigation."

2. Historical Studies – "An historical research study would be directed towards organizing data according to chronological periods; with an analysis of causes, conditions, and effects; and the interpretation of the data collected."

3. Developmental Studies – "Developmental studies are based upon the keeping of comprehensive and precise records of happenings as they occur."

4. Case Studies – "Case studies are similar to developmental studies in that they may be based upon precise observations of reactions. The data may also be acquired by retrospect or recollection."

5. Experimental Studies – "An experiment is a trial made to confirm or disprove something. Experimental techniques are used in research to evaluate a formulated hypothesis by the use of controls and repetition."

6. Regression and Correlation Studies – "Research of this type would deal with investigation of the relatedness of different items or areas."[1]

Watson has proposed a classification of research based upon the kind of problem under study and its attendant unknowns. Such a codification does not take into account the method of inquiry. One or more procedures of investigation may be used depending on their appropriateness to a given problem. The categories are as follows:

1. Identification – "Studies which deal with and require the identification of elements and patterns of elements in a given phenomena. Practically all research presents some aspect of the problem which demands the process of identification. The quality, quantity, or dynamics of an unknown or groups of unknowns are the subject of the research."

2. Comparison – "Studies which deal with the likeness and difference of the two or more unknowns. Identification of each of the unknowns is of course needed but this process only serves to make the solution of the problem study possible."

3. Relationship – "Studies which deal with the mutual variation of two or more variables. Obviously identification and comparison are involved but again only as means to the end of establishing the degree of relationship between phenomena."

4. Prediction – "Studies which attempt to use psychometrics to establish the predictive validity based on one or more evaluative devices to some future performance. In the parlance of statisticians, studies such as this are termed regression studies. Measurements of the phenomena are taken and the degree of correlation is ascertained. Very high coefficients of correlation are necessary before prediction by regression can be better than guessing."

5. Explanation – "Studies which deal with cause and effect relationships are termed explanation studies. The central problem is to exercise extreme care in identifying the kind of relationship found and if the effect is due to the causes which are found."

6. Evaluation – "Studies dealing with the assessment of a specific phenomenon or set of phenomena. Very often the aim is to develop some type of measurement tool, refine it and standardize."

7. Prescription – "Studies dealing with the development of materials which are thought to include suggestions for improved practice in music education. Courses of study, curriculum guides, manuals of instruction are examples of prescriptive studies."[4]

Research Methodology

Most writers of educational research texts agree on three and occasionally four methodologies of research. Moreover, there is consensus that a single research problem will often involve a variety of problem-solving procedures. The identification of research procedure serves as a means of classifying research studies with some difficulty when more than one methodolgy is employed. At all events it is useful to review the description of research types set forth by one writer. Best identifies three types of education reseach as follows:

1. Historical Research – "Historical research describes *what was*. The process involves investigating, recording, analyzing and interpreting the events of the past for the purpose of discovering generalizations that are helpful in understanding the present and in predicting the future. The focus of historical research is on change, growth or development of individuals, groups, practices, movements, institutions or ideas. Historical research attempts to go back to primary, original or first-hand sources of information."

2. Descriptive Research – "Descriptive research describes *what is*. It involves the description, recording, analysis and interpretation of the present nature, composition, or processes of phenomena. The focus is on prevailing conditions, or on how a person, group, or

thing behaves or functions in the present. It often involves some type of comparison or contrast."

3. Experimental Research – "Experimental research describes *what will be* when certain factors are carefully controlled. The focus is on cause-effect relationships; variables are carefully manipulated for the purpose of determining their influence."[5]

The fourth type of research included by some writers is philosophical. Grouped with the historical (what was), descriptive (what is), experimental (what can be); philosophical research can deal with questions involving what should be or what ought to be. Music education needs to produce researchers and research of a philosophic nature. There is a paucity of pure philosophical research particularly dealing with various aesthetic theories and their implication for the practice of music education. As one writer states, "the responsibility, therefore, finally devolves upon these (sic) who form the philosophy for the profession; they must state clearly the objectives they believe to be essential, delineating the areas of activity and the levels of achievement the child should experience in public school music."[6]

Contained in a report of *A Conference On Research in Music Education* is a statement indicating the confusion surrounding the methodology of research in music education. Cady writes:

> "As one examines the numerous descriptions of research types and the nomenclature applied to these types as well as to their procedures, he finds variety and inconsistency. It seems that a true categorization of research types and of basic research procedures has never been developed thoroughly. Nor has there been developed a consistent nomenclature for one type of research or another."[7]

In the same document, Cady defines a system of methodologies and terms it, "a tool for a limited purpose and an initial step."[8] In spite of any limitations, the system is carefully detailed and based on a large sampling of research method literature. The system of four basic types of research inquiry is described as follows:

I. *Descriptive Research:* To collect evidence on the basis of some hypothesis or theory, carefully tabulate and summarize the data and then thorougly analyze it in an endeavor to draw meaningful generalizations that will advance knowledge.

   A. *Survey Studies:* To collect detailed descriptions of existing phenomena with the intent of employing the data to justify current conditions and practices or to make more intelligent plans for improving social, economic or educational conditions and processes. The objective may not merely be to ascer-

tain status by comparing it with selected or established standards, norms, or criteria.

1. *Existing Status:* To collect detailed descriptions of existing phenomena with the intent of ascertaining current conditions and practices or making judgments about social, economic, or educational conditions and processes.

2. *Comparisons of Status:* To determine the adequacy of status by comparing it with selected or established standards, norms, or criteria.

3. *Methods of Improving Status:* To collect information from others as to how they have solved similar problems in order to obtain information that will assist in the improvement of an existing situation.

B. *Interrelational Studies:* To collect not only information about existing status, but also endeavor to trace interrelationships between the facts obtained to gain a deeper insight into the phenomena.

1. *Case Study:* To make an intensive investigation of the complex factors that contribute to the individuality of a social unit – a person, family, group, social institution or community.

2. *Casual Comparative Studies:* To discover not only what a phenomena is like, but if possible, how and why it occurs. Then compare the likenesses and differences among phenomena to find out what factors or circumstances seem to accompany certain events, conditions, processes, or practices.

3. *Correlation Studies:* To ascertain the extent to which two variables are related, that is, the extent to which variations in one factor correspond with variations in another.

C. *Developmental Studies:* To be not only concerned with the existing status and interrelationships of phenomena, but also with changes that take place as a function of time. They describe variables in the course of their development over a period of months or years.

1. *Growth Studies:* To determine the nature and rate of changes that take place in human organisms.

2. *Trend Studies:* To obtain social, economic, or political data and analyze it to identify trends and to predict what is likely to take place in the future.

II. *Historical Research:* To present an accurate account of the past in order to aid "in the interpretation of the future." Modern historical research is critical, it is a search for truth.

A. *Documentary:* To collect, examine, select, verify and endeavor to interpret and present those facts in an exposition that will stand the test of critical examination.

B. *Artifacts:* To collect, examine, select, verify and classify artifacts in accordance with specific standards, and endeavor to interpret and present those artifacts in an exposition that will stand critical examination.

III. *Experimental Research:* To deliberately manipulate certain factors under highly controlled conditions to ascertain how and why a particular condition or event occurs, and to observe and interpret the ensuing changes.

IV. *Philosophic Research:* To study ideas for the purpose of determining the significance of meanings in terms of their relevance to the assessment and forging of those fundamental ideas that guide programs of reflection and conduct.

A. *Analysis:* To examine the meanings and relationships of ideas. The analytic function searches out the implications of assertions, their consistency, and the assumptions involved in a body of theory.

B. *Criticism:* To examine basic alternative modes of life and thought. The formulation of these alternatives thus presents the basic choices which confront us and thereby the task of evaluation is created.

C. *Speculation:* To examine the imaginative and visionary aspect of philosophic studies in order to find constructions of ideal futures, projections or desirable societies, experiences and ends for mankind."[9]

For present purposes, four types of research methodology are identified as those applicable to problems in music education: (1) historical, (2) descrip-

tive, (3) experimental, and (4) philosophical. Historical research is defined as systematic inquiry of the record of mankind as it relates to the processes of music education. The historical method is used by all disciplines and is particularly adaptable to research in musicology and studies of the evolution of educational processes. Descriptive research embraces a broad category of studies primarily associated with the present status of individuals, events, social institutions and other forms of human activity. Case studies of human behavior and its change; growth and development research; sociological studies of communities and collective human action; are also examples of descriptive research. Experimental research is thought of as investigations where the experimenter exerts controls over variables or accounts for uncontrolled variables which affect behavioral changes in human beings. The manipulation of variables is accomplished to subject a theory, model or hypothesis to a trial situation. Philosophical research deals with ideas or systems of ideas relating to human thought and conduct. As a research procedure in music education, philosophic inquiry can identify appropriate goals and patterns of achievement for learners.

The Process Variables

Research which is designated as that dealing with music education must concern itself with the essence of the process of music education. Simply conceived, music education needs the following before it can take place:

1. A learner.
2. A teacher.
3. An interaction between learner and teacher.
4. Material for instruction.
5. An instructional setting.

A primary concern of research in music education is the teaching/learning process of music. Although such activity is often carried on in informal situations, particular emphasis can be assigned to formalized learning activities found in educational institutions. There are also many significant problems relating to the involvement of people and music. For example, in noninstitutional settings, the musical taste of adults, the concert attendance habits of certain communities, the importance of music in the life of a community, are all questions which have great relevance for music education. Important as these questions are, one focus of research in music education needs to be on the characteristic activities which relate to the learning of music in educational institutions. A very careful analysis of the factors involved in this process reveals the most significant objects for research activity. The five factors listed above are of central importance to music education.

A committee report contained in the report of *A Conference on Research in Music Education* proposed a two-dimensional system[10] for the classification of music education research. One dimension was the basic problem area and the other, the method of inquiry. Method and target were fused in a matrix which permitted easy classification.

A Classification System

In the preceding paragraphs, three dimensions of research in music education have become apparent. 1) The central variables of music education were identified. These variables are: the teacher, the learner, the interaction of the teacher and the learner, the content of instruction, and the environment of instruction. 2) The interdisciplinary nature of music education was noted. A number of disciplines were shown to be significant for reasons of procedure and findings. These disciplines are therefore essential contributors to the classification of research studies in music education and compose another important dimension. 3) The third dimension of music education research is the methodology of inquiry. Four types of procedure were identified: historical, descriptive, experimental, and philosophic.

Figure I is a three-dimensional matrix for the classification of research studies in music education. Dimension I is the central variable involved; dimension II orders by subject-matter discipline and dimension III by research methodology. Using a decimal system of classification the following numerical typing can be accomplished, e.g., 1.11 would represent a study dealing with an historical aspect of teachers within an educational institution.

The following five studies chosen at random from the *Journal of Research in Music Education* are classified according to the matrix.

1. Colbert, John K., *The Teaching Load and Related Activities of Music Teachers in Indiana Public Schools, 1953-54.*

Dimension I	The Teacher
Dimension II	Education
Dimension III	Descriptive
Classification	1.12

2. John, Robert W., *Elam Ives and the Pestalozzian Philosophy of Music Education.*

Dimension I	The Content of Instruction
Dimension II	Philosophical
Dimension III	Historical and Philosophical
Classification	4.41

3. Stevenson, Robert M., *Musical Instruction in Incan Land.*

Dimension I	The Interaction of the Teacher and the Learner
Dimension II	Anthropology
Dimension III	Historical
Classification	3.61

4. Hutton, Doris, *A Comparative Study of Two Methods of Teaching Sight Singing in the Fourth Grade.*

Dimension I	The Interaction of the Teacher and the Learner
Dimension II	Psychology – Education
Dimension III	Experimental
Classification	3.33

5. Reimer, Bennett, *Leonard Meyer's Theory of Value and Greatness in Music.*

Dimension I	*Content of Instruction*
Dimension II	*Philosophy (Aesthetics)*
Dimension III	*Philosophic*
Classification	*4.44*

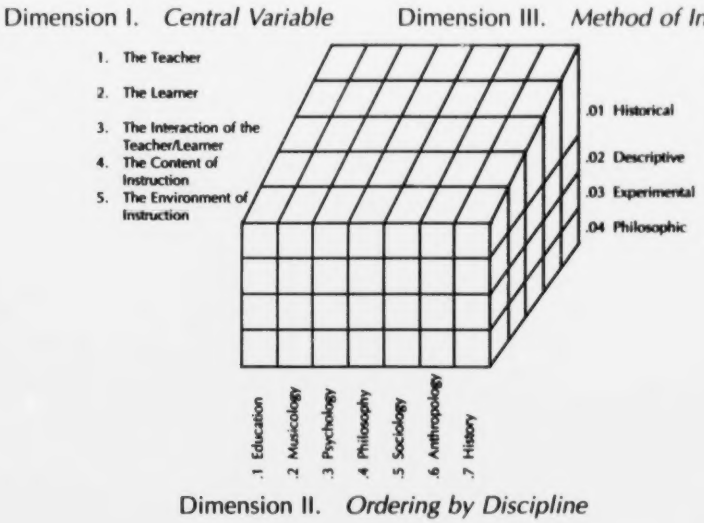

Figure I. – A Three-Dimensional Matrix for the Classification of Research Studies in Music Education

The matrix does not allow for scientific studies of an acoustical nature. Appropriate research from physiology relative to the auditory and/or visual perception processes may be included in the category of psychological research. Although this matrix is not intended to be a final plan of classification, it can serve to assist problem identification for young researchers.

The most efficient process of identifying problem areas is perhaps in relation to the Process Variables of music education. The following listing of needs is, of necessity, incomplete and somewhat vague, since specific problem statements are not appropriate to this presentation.

Process Variable No. 1 – The Teacher: Teacher perception; emotional, psychological maturational characteristics of successful and unsuccessful teachers; teacher competencies (sociological, psychological and musical); philosophical viewpoints of teachers; roles and activities of teachers; and professional educational practices of teachers.

Process Variable No. 2 – The Learner: General and musical growth characteristics of learners; concept formation in music; tastes and attitudes of learners towards music; musical experiences of various sociological settings; the development of cognitive, affective and psychomotor behaviors in relation to music; the identification of inherited and environmental influences on growth in musical and aesthetic awareness.

Process Variable No. 3 – The Interaction of the Teacher and the Learner: The application of new learning theories to music instruction; comparative methodology in music learning; instructional hardware (AV equipment) and its relation and implication for music learning; the measurement of pupil achievement; the implementation of sound philosophic doctrines into instructional practice (teaching music through performance).

Process Variable No. 4 – The Content of Instruction: The discovery and implementation in instruction of appropriate musical materials; constructing a system of value criteria for the materials of instruction; the sequence of materials in music learning; suggested curricular vehicles for music instruction; innovations for improved plans of instruction and modes of instruction.

Process Variable No. 5 – The Environment of Instruction: Sociological analysis of community needs in music; the impact of music programs on communities; evaluative tools for existent programs of music education; music rooms and equipment in relation to innovations in instructional practice; administrative and supervisory practices in relation to music education; specialized programs of instruction for handicapped learners (sociologically, mentally, emotionally, and physically, handicapped).

Music education is identified as a discipline dependent on many other disciplines. Areas of the humanities and social sciences are supportive to music education and it is necessary to take advantage of research findings and methods of inquiry in order to place music education in a broad perspective. The proposed matrix in Figure I can assist the beginning researcher in delimiting and categorizing the breadth of researchable problems in music education.

References

[1]Barzun, Jacques, (1951), *Pleasure of music*. New York: Viking Press, *1*.

[2]Britton, Allen. September 1953, "Research in music education." *Education, 74, 40-41*.

[3]Morgan, Hazel and Burmeister, Clifton, *Music research handbook*. Evanston: "The instrumentalist," *2-3*.

[4]Watson, Jack M., (Spring, 1964), "Patterning of research problems." *Council for Research in Music Education, Bulletin No. 3, 1*.

[5]Best, John W., (1959), *Research in education. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 12*.

[6]Colwell, Richard, (September, 1967), "Music education and experimental research." *Journal of Research in Music Education, 75*.

[7]Cady, *op. cit., 168*.

[8]*Ibid., 169*.

[9]*Ibid., 169-170*.

[10]Cady, Henry L., (1967), *A Conference on Research in Music Education*. USOE Project No. 6-1388, Columbus, Ohio: The Ohio State University, *32*.

The material in this article was given to the Bulletin editor in the late 1960's. Professor Sidnell was thinking of writing a research text and his ideas crystallized in the above schema. To our knowledge the material has never appeared in print. The material has been used as a "pass out" in Professor Colwell's introductory research class.

FEATURE ARTICLE

Framework for Research: An International Perspective

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> Believing that music education is a study of the nature of, and modification of, human music abilities, I am thoroughly convinced that we need to fashion a rational framework upon which a fabric of process can be woven to effect well-directed change in the people we teach. It is all about theory.
>
> — Robert G. Sidnell (1981, p. 175)

In this statment, the late Robert Sidnell provides music education researchers not only with a critical direction and focus for their endeavors, but also a reminder of the ultimate function of scientific inquiry: the establishment or refinement of theory.

Years ago, on a trip to California, I visited a movie studio and had a tour of the back lot. We strolled through the dirt streets of the Frontier Town and saw the corner saloon with its swinging doors, the Sheriff's office with its bars on the windows, and the hitching rails in front of the wooden sidewalks, just as I had seen them in numerous Saturday afternoon matinees. I stepped into the Print Shop where I remembered (in at least one movie) that the gentle old man and his pretty daughter published the town's newspaper. Instead of a printing press, I saw a vacant lot with weeds growing and some debris scattered about. I had not entered a building, but only stepped through the door of a facade. On the back side, I could see the rough framework which supported the facade, not only of the Print Shop, but of the other buildings as well. Reality suddenly changed before my eyes. No buildings existed at all, not even the framework for a building. The illusion of a film succeeds because the viewer observes only the lights and shadows projected on a two-dimensional screen, thus the film maker requires only two-dimensional objects for filming; a facade will do.

But we live in a three-dimensional world, and frameworks for habitable structures in our reality must include all dimensions. In a similar way, the effectiveness of an instructional system depends upon the completeness and adequacy of the framework which underpins it; facades will not do.

The framework for instruction consists of the theories we possess about the critical features of the instructional system. With incomplete or inadequate theories, we can only pursue related instructional tasks ". . .upon (1) faith and authority of many former teachers and college methods teachers — not the best of all worlds as most of us could attest; and (2) trial and error — a notably inefficient, but better method of determining action," as Sidnell (1981, 175) characterized his early teaching career.

When Sidnell used the term *theory* in the opening quotation of this article, he meant it in the scientific sense. Many people consider research to be concerned with the gathering of facts, and more specifically, the establishment of *truth.* Researchers do seek facts, but only as one part of the process. Their principal concern centers on the establishment of theory, the modification of faulty theory, and the elimination of invalidated theory.

The four-stage process of research consists of (1) the observation of facts, (2) a logical, but tentative, explanation of those facts which we label theory, (3) a prediction based on the tentative theory, and (4) a test of the prediction which produces a new set of facts. Kemeny (1959, pp. 85-86) emphasizes the cyclic nature of this process where the facts of the fourth stage of the original theory become the facts for the first stage of the new theory. He goes on to say,

> A scientist holds his theories tentatively, always prepared to abandon them if the facts do not bear out the predictions. If a series of observations, designed to verify certain predictions, forces us to abandon our theory, then we look for a new or improved theory (p. 86).

Kelly (1963) puts it another way:

> The world is not an abandoned monument. It is an event of tremendous proportions, the conclusion of which is not yet apparent. The theories that men employ to construe this event are themselves incidents in the mammoth procession. The truths the theories attempt to fix are successive approximations to the larger scheme of things which slowly they help to unfold. Thus a theory is a tentative expression of what man has seen as a regular pattern in the surging events of life (p. 19).

Rather than *truth,* the researcher deals with these successive approximations, these theories. More to the point, the researcher engages in the identification of ways in which the theory is *not* valid. But, replacing theory or even revising it can be a sticky business. Some teachers cherish a theory so much that it has become "truth" for them; such people only want confirmation of their theories, and avoid adopting hypotheses or asking questions which might lead to disconfirmation. They want only to prove their "theory" true. When they do seek facts, they tend to engage in selective observation of only those facts which support their belief.

The music education researcher dares not engage in such selective behavior. Acquiring the needed framework for a music instructional design demands an inspection of *all* facts which address the topic in question. And how do we learn what types of facts to gather? First of all, we would do well to have a clear understanding of what we mean by a theory of music instruction. For purposes of this paper, I propose a paraphrase of a Bruner definition (1966, p. 1) in which a theory of music instruction would be "how musical growth and development are assisted by diverse means." What are the important features of a system which constitute those diverse means?

A system contains three basic categories of components: input, process and output. Within an instructional system, input components refer to those things which exist before the instructional process actually begins. Certainly, the student ranks high as a principal component. What do we know about the student's potential to achieve musical skill and knowledge? What does the student already know and what can the student already do? The answers to such questions should make a difference in the instructional plan we design. And what about the family? Will their economic status make a difference, particularly when one considers the cost of musical instruments, music and materials, and possibly private tutoring? What practical difference in instructional planning is required when parents do not have time to work with their children on musical development, or when the child is not provided adequate practice time in the family schedule? And what limits does the degree of teacher competence place on the instructional operation? Are the means available to us to learn answers to such questions? To what degree have music education researchers provided us with answers to such questions? Will the answers provided remain valid over time?

We need to pursue the same line of inquiry with the *process* and *output* components. Process components would include, at minimum, inspections of teacher activity (e.g., demonstrating) and student activity (e.g., practicing). Output components would include at least demonstrations of acquired knowledge (e.g., comprehension) and acquired skills (e.g., musical performance), reflecting the effectiveness of the instructional process. Each of the components in the system categories (input, process, output) guide the music researcher to facts that generate those theories that become the framework for our music instruction design. To derive the needed facts about the interrelationships of these components requires carefully planned and executed applied research, preferably in real rather than laboratory settings.

In addition to investigating theories at this first, applied level, music education will also profit from investigations which explore more tangential theories. This second level of inquiry involves more basic research,

and the theories which emerge from such investigations either inform instructional theories or constitute the content of instruction. Some theories illustrative of this second level of inquiry would be acoustic theories, perceptual theories, memory theories, theories of teacher preparation, measurement theories, etc. Such theories are important to music educators when the implications that they hold for theories of music instruction are clear.

But we are not just beginning. Research in music education has been going on for many years, both here in the United States and abroad. A look at the major music education research journals published in English indicates activity at both levels of research. Instead of reinventing the wheel, we need to identify the present status of our music instruction theories and then move on to the work left undone.

In the remainder of this paper, I want to develop an international perspective of the sort of framework for music instruction we have built over these years as a result of our research activity. Recent articles have categorized music education research reports by the type of research method used (e.g., historical, experimental, etc.). I propose to use an alternative taxonomy: categories of theories which research has provided. It was not possible to conduct an international review of all the reports of music education research, both because the reports are scattered across many journals not readily accessible to me, and because a number of the reports were in languages which I do not read. Instead, I selected as a sample of that population of research the reports of research presented over the past 18 years at seminars of the Research Commission of the International Society for Music Education. While such a sample may not be the most representative of the population of inquiries, it reflects the research activity of 109 different researchers representing 25 different countries, and reported in 190 different articles. The bibliography at the end of this article cites the sources in which these reports may be found. To begin with, I examined those reports to determine what had been done at the first level of inquiry, where applied research had been undertaken to assess the relationship of input, process and output components of a music instructional system. Table 1 presents the taxonomy of an instructional system and the corresponding number of studies that examined theories under one or more components of that system.

Table 1

Fundamental Components Necessary for a Music Instruction System (First Level Research Topics)

NOTE: Right column indicates number of papers presented at ISME Research Commission Seminars which addressed theories relevant to that component.

INPUT	
Student factors	
music aptitude	0*
music achievment	
skills	0
knowledge	0
attitude toward music	
musical goals	0
motivation	0
Family factors	
music goals for child	0
parental support	
economic	0
time	0
Societal factors	
music goals for children	0
peer pressures	0
Teacher factors	
attitude toward music	0
musical goals for children	0
musical competence	
skills	0
knowledge	0
instructional ability	0
PROCESS	
Teacher activity	
assigning	0
demonstrating	1
diagnosing	2
encouraging/reinforcing	1
guiding	1
questioning	0

Table 1 (continued)

PROCESS	
selecting and using materials	0
selecting and using equipment	2
self-evaluation	1
telling	2
Student activity	
attention/observing	2
class discussion	1
listening	2
practicing/attempting actively	3
questioning	0
studying	0
OUTPUT	
Demonstrating acquired knowledge	
facts	1[b]
comprehension	1
Demonstrating acquired skills	
musical perception	0
performance (solo/ensemble)	0
deriving theories from facts	0
application of knowledge (problem solving)	0

[a] Only reports are included whose principal focus is the relationship of a given *input* component to instructional process.

[b] Only reports are included whose principal focus is the relationship of a given *output* component to instructional process.

The most obvious conclusion one may reach upon inspecting Table 1 is the paucity of theories which directly address components in a music instruction system. Clearly, if these 190 reports approximate a representative sample of the research, we face a facade, and a shaky one at that. I am inclined to believe that the sample may not have been adequately representative, but that certainty will await a similar evaluation of a broader sample of the existing research.

As I will indicate in more detail later, we have a number of studies that examine aptitude and achievement of students, as well as research on the construct, validity, and reliability of measures intended to assess these factors, but little effort has been made to show the relationship that such student factors have for the design of the instructional process. There are data derived when subjects in experiments have been blocked on socio-

economic variables, but what do we know about the impact that parents' ability to pay for instruments and lessons has upon the instructional process?

There are those investigations of classroom interactions that describe in detail the amount of time spent in various teacher/student interactions and activities, but do we have the clear data which allow more than implicit or speculative theory about the relationship of those interactions to instructional outcomes? We find no such data in the sample of studies investigated here. What framework can we build for instructional theory from the few studies counted under instructional process components? Certainly, the international perspective of research directly related to instructional theory in music is not good.

Table 2 presents the second taxonomy with its corresponding number of investigations. Thirteen of those reports fall under the rubric of "position paper," because they provided no clue to any theory.

Table 2

Second Level Research Topics
Addressed in ISME Research Commission Seminars

Career	3
Curriculum/instruction	
Goals	7
Materials	8
Methods	14
Assessment of effectiveness	4
Equipment Utilization	
Sound synthesis (computer)	1
Sound analysis	2
Measurement	
Test construction	6
Test validity and reliability	14
Performance	19
Philosophy of Music Education	5
Position paper	13

Table 2 (continued)

Psychomusical	
Absolute pitch	2
Aesthetic/preference	9
Affect/emotion	2
Aptitude	4
Cognitive structures/prototypes	5
Concept formation	7
Creativity	5
Developmental	16
Expectancy	2
Learning styles	4
Linguistic	2
Memory	4
Motivation	1
Neural functioning	3
Non-musical effect/therapy	12
Perceptual	39
Personality/attitude	10
Transfer (music to music)	1
Research (dissemination)	1
Sociomusical	
Socialization	4
Acculturation	1
Tradition and change	1
Comparative music education	4
Teacher Preparation	
Requisite knowledge/skills (music and other)	3
Curriculum development	1
Instructional skills/classroom management	1

The most popular area of inquiry is the psychomusical one, and the topic receiving the most attention is perception. Theories related to curriculum/instruction, performance, and measurement are the next most interesting to researchers. A large number of the papers reporting second level inquiries failed to make clear to the reader in what way the findings could inform instructional theory. In defense of the researchers, however, they wrote under the constraint of a 2500 word limit on their papers. In fact, in two of the cited sources listed in the bibliography at the end of this article, only brief abstracts were printed. Had more space been allotted them, perhaps more researchers would have clarified the relationship that their findings had to instructional theory. Nonetheless, the importance of clearly establishing that relationship cannot be overemphasized.

It is by no means certain that all the 109 researchers understand the philosophy of science underlying Sidnell's plea to build a framework for instruction on good theory. If it were only a matter of philosophical difference, that would be one thing, but I have a suspicion that it is more basic than that; the problem is likely one of education in scientific process. I have no "plan" which might remove that problem — not at the national level, much less at the international one.

After having read those reports one more time in preparation for this article, I feel something like I did on that film studio back lot many years ago. The Frontier Town still looks impressive, but when I step through the door of the Print Shop, I become aware of the incomplete frameworks which we have constructed. True, not all is facade; but, the framework of theory for a strong music instruction system is still far from complete. When we have fashioned it, then we can expect *to effect well-directed change in the people we teach. It is all about theory.*

References

Bruner, J.S. (1966). *Toward a theory of instruction*. Cambridge: The Belknap Press of Harvard University Press.

Kelly, G.A. (1963). *A theory of personality: The psychology of personal constructs*. New York: W.W. Norton.

Kemeny, J.G. (1959). *A philosopher looks at science*. New York: D. Van Nostrand Company.

Sidnell, R.G. (1981). Response (to R.N. Shepard paper). *Documentary report of the Ann Arbor Symposium*, Reston, VA: Music Educators National Conference, 174-179.

Bibliography of ISME
Research Commission Seminar Reports

1968 Reading, England
Journal of Research in Music Education, 1969, *17*(1).
1970 Stockholm, Sweden
Council for Research in Music Education Bulletin, 1970, *22*.
1972 Gummersbach, Germany
The Third International Seminar on Research in Music Education, Kassel: Barenreiter, 1973.
1974 Christchurch, New Zealand
Music Education for the Very Young Child, Studies in Education, No. 25, Wellington, New Zealand: New Zealand Council for Educational Research, 1975.
1975 Mexico City
This was a special seminar; no report was published.
1976 Wetzawinkel, Austria
Council for Research in Music Education Bulletin, 1977, *50*, Special International Issue.
1978 Bloomington, Indiana, USA
Council for Research in Music Education Bulletin, 1979, *59*.
1980 Dresden, East Germany
Council for Research in Music Education Bulletin, 1981, *66-67*.
1982 London, England
Psychology of Music, 1982, Special Issue: Proceedings of the Ninth International Seminar on Research in Music Education.
1984 Victoria, B.C., Canada
Council for Research in Music Education Bulletin, 1985, *85*.

FEATURE ARTICLE

Recent Research Pertaining to Psychomotor Skills in Music

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The invited address on motor learning in music education that Robert Sidnell (1981) presented at the 1978 Ann Arbor Symposium — Applications of Psychology to the Teaching and Learning of Music — ended with several questions that were intended as guides for future research in music education. It seems appropriate as a way of honoring Sid to reiterate those questions and note what kinds of answers music education research can provide eight years later.

His questions appear below in italics. The accompanying "answers" have been generated by considering the research studies that have appeared in the following journals in the time span from 1978 to the present: *Journal of Research in Music Education, Bulletin of the Council for Research in Music Education, Journal of Research in Singing,* and *Psychology of Music.* In addition, the issues from 1978 to the present of *Dissertation Abstracts International* were examined in order to identify pertinent doctoral theses in music and music education.

What is the relationship between motor learning and other forms of learning in music? The results of two recent doctoral theses suggest that motor performance activities enhance affective outcomes of music instruction. Cheek (1979) held objectives, materials, and teaching style constant between her experimental and control groups (N = 57 fourth graders); the distinction between the groups was that members of the experimental group received systematic psychomotor experiences as an integral part of their music instruction. Among other measures, the *Piers-Harris Children's Self-Concept Scale* was administered so that Cheek could gather data regarding changes in self-concept over the fifteen-week instructional period. She found that there was a significant gain in self-concept for the experimental group over the control group, thus implying that motor learning can enhance affective outcomes. The results from Carlson's study of fifth graders (1983) also support this implication.

What application of current motor models should be made to music education? Is there reason to believe motor patterns in music are different from other motor patterns? A recently-published article by Welch (1985a) is particularly noteworthy here. He presents a fascinating model that describes learning to sing in tune in language that is compatible with the language one encounters in the extant literature on motor schemas; his model implies that motor patterns in music probably are not different from other motor patterns.

What is the role of proprioception in small-muscle music responses? The one recent study whose results are most pertinent to this question considered the role of proprioception in large-muscle music responses. Schwaegler (1984) compared the effects of four feedback modes on college music majors who were working with a computer-based trainer for music conducting. Based on analysis of the accumulated data, he recommended that supplementary feedback be provided in the early stages of skill acquisition in music conducting, then removed as learners progress in order to avoid interference with the monitoring of intrinsic (proprioceptive) feedback.

Two other recent studies provide information regarding the role of proprioception in the music performance of advanced players or singers. Salzberg (1980) evaluated the intonation accuracy of 50 string instrumentalists — college music majors. The students performed various playing tasks under conditions of unrestricted vision and restricted vision (blindfolded). She found no significant difference in intonation accuracy between the two conditions. Ward and Burns (1978) found that their subjects demonstrated good control of pitch in isolated test items even though they had no auditory feedback, thus implying that previous training and proprioceptive feedback guided performance.

A study by Walters (1983) also is of interest here, for its results bear on a statement of Sidnell's that followed the question on proprioception: A thorough understanding of the proprioception/somasthetic phenomenon would help in designing instructional strategies to optimize psychomotor outcomes. The results of the experiment by Walters imply that teachers in the primary grades will have greater success in getting a student to synchronize movement with music if they will present music at a tempo which closely corresponds to the student's personal tempo. (Personal tempo was assessed by asking a student to pat his/her lap with both hands "in a steady beat that feels good to you.")

What can we learn about efficient motor practice? In addition to the guidelines provided by Schwaegler's research, the conclusions of two other recent studies should be mentioned here. Welch (1985b) found that knowledge of results is an important consideration when working with young out-of-tune singers (ages 6-7); students need information about the

correctness of their responses. Ross (1985) discovered that mental practice is useful for college trombonists if it is interspersed with physical practice; the group that had mental practice alone did not improve significantly over the control group (no practice).

What is the transferability of motor skills in music? What part does cognition play? Recent research by Davis (1982), Schlacks (1981), and Brick (1984) provides a partial answer to these questions. The results of these studies suggest that the systematic use of vocal training in instrumental rehearsals or lessons may improve instrumental performance/intonational accuracy.

The other evidence that is available has been provided by correlation studies such as the one by Elliott (1982). He found that two of seven predictors accounted for 88 percent of the variance in the scores of college music majors on the *Watkins-Farnum Music Performance Scale* — score on a rhythm reading test and "score" on performance jury evaluations. Such a finding may be indicative of a high degree of transfer.

What are the relationships between motor learning and other types of music learning? The results of a study by Phillips (1985) suggest that motor learning can provide beneficial outcomes in terms of musical criteria. The 44 students in his experiment (grades 2-4) were randomly assigned to one of two groups. One group had a thirty-minute singing class twice weekly for eighteen weeks; singing was the exclusive focus of each instructional period. The second group had the same schedule, but with ten to twelve minutes of each class period devoted to breath control/breath management exercises. Phillips found that the training significantly affected breathing "style." The more interesting finding in terms of Sidnell's question was that students in the experimental group significantly outperformed those in the control group on measures of singing range, vocal intensity, and pitch accuracy.

What about human growth and motor learning? What information might help us understand learner capabilities better in terms of muscle and neural development? A great deal of information regarding growth patterns of psychomotor skills in music has been accumulated in the last few years. Several studies have demonstrated that improvement in psychomotor skills occurs gradually as age advances; these studies have utilized subjects from age three to age ten (Schleuter and Schleuter, 1985; Gilbert, 1980; Gilbert, 1983; Rainbow, 1981; Gaughf, 1982; and Walters, 1983). The results of these studies are not as unequivocal when it comes to the question of whether there are differences in growth patterns between boys and girls. Gilbert (1980) and Schleuter and Schleuter (1985) observed differences in favor of girls; their subjects ranged in age from three to eight. Gaughf (1982) and Walters (1983) found no differences between boy and girl subjects who ranged in age from five to ten.

One particularly useful result for practice was provided by the studies of Rainbow (1981) and Schleuter and Schleuter (1985). These researchers concluded that preschool and primary grade children demonstrate greater accuracy of response to musical tasks if they respond by vocal chanting rather than by stepping or marching.

What aspects of neurophysiology might assist the music educator in motor learning problems? Studies by McKinney (1984) and Dennis (1984) are of interest here. McKinney's research was designed to determine the effect of peripheral skin temperature biofeedback training on musical performance anxiety; unfortunately, his results are largely inconclusive. Dennis examined the effect of three methods of supporting the double bass on muscle tension by recruiting 40 college bassists and asking them to perform while attached electrodes transmitted data bearing on muscle tension in each arm and the upper and lower back. He found no differences in muscle tension or quality of musical performance among representatives of the three different methods — bass standing ($n = 8$), student standing ($n = 21$), or sitting ($n = 11$).

The remaining questions from Sidnell apparently remain unaddressed by music education researchers. They are as follows:

1. What motor skills are important to musical growth?
2. What about the timing sequence and consideration of motor responses; how are they accomplished? What physiological mechanisms are at work? How do we make so-called automatic patterns from irregular sets?
3. How does motor memory function?

The references section which appears below provides testimony that the music education profession still has a great need for further research in the area of psychomotor skills. In 1978, Sidnell and the present author found it astounding that the profession had so little confirmed knowledge about an area that is such a basic part of all music education programs; in 1986, the astonishment remains.

References

Brick, J.S. (1984). An exploratory study of the effects of a self-instructional programme utilizing the *Pitch Master* on pitch discrimination and pitch accuracy in performance of young trombonists. *Psychology of Music, 12,* 119-125.

Carlson, D.L. (1983). The effect of movement on attitudes of fifth grade students toward their music class. *Dissertation Abstracts International, 44,* 1015A. (University Microfilms No. DA8319315)

Cheek, H.Y. (1979). The effects of psychomotor experiences on the perception of selected musical elements and the formation of self-concept in fourth grade general music

students. *Dissertation Abstracts International, 40,* 2530-2531A. (University Microfilms No. 7925121)

Davis, L.P. (1982). The effects of structured singing activities and self-evaluation practice on elementary band students' instrumental music performance, melodic tonal imagery, self-evaluation, and attitude. *Dissertation Abstracts International, 42,* 3051A. (University Microfilms No. 8128981)

Dennis, A. (1984). The effect of three methods of supporting the double bass on muscle tension. *Journal of Research in Music Education, 32,* 95-103.

Elliott, C.A. (1982). The relationships among instrumental sight-reading ability and seven selected predictor variables. *Journal of Research in Music Education, 30,* 5-14.

Gaughf, T.M. (1982). Measuring the development of basic psychomotor music skills in children grades two through five. *Dissertation Abstracts International, 43,* 1766-1767A. (University Microfilms No. DA8226138)

Gilbert, J.P. (1980). An assessment of motor music skill development in young children. *Journal of Research in Music Education, 28,* 167-175.

Gilbert, J.P. (1983). A comparison of the motor music skills of nonhandicapped and learning disabled children. *Journal of Research in Music Education, 31,* 147-155.

McKinney, H.V. (1984). The effects of thermal biofeedback training on musical performance and performance anxiety. *Dissertation Abstracts International, 45, 1328A. (University Microfilms No. DA8418130)*

Phillips, K.H. (1985). The effects of group breath-control training on the singing ability of elementary students. *Journal of Research in Music Education, 33,* 179-191.

Rainbow, E. (1981). A final report on a three-year investigation of the rhythmic abilities of preschool aged children. *Bulletin of the Council for Research in Music Education, 66-67,* 69-73.

Ross, S.L. (1985). The effectiveness of mental practice in improving the performance of college trombonists. *Journal of Research in Music Education, 33,* 221-230.

Salzberg, R.S. (1980). The effects of visual stimulus and instruction on intonation accuracy of string instrumentalists. *Psychology of Music, 8,* 42-49.

Schlacks, W.F. (1981). The effect of vocalization through an interval training program upon the pitch accuracy of high school band students. *Dissertation Abstracts International, 42,* 3492A. (University Microfilms No. 8201436)

Schleuter, S.L. and Schleuter, L.J. (1985). The relationship of grade level and sex differencs to certain rhythmic responses of primary grade children. *Journal of Research in Music Education, 32,* 23-29.

Schwaegler, D.G. (1984). A computer-based trainer for music conducting: The effects of four feedback modes. (Doctoral dissertation, The University of Iowa, 1984). *Dissertation Abstracts International, 45,* 2794A.

Sidnell, R.G. (1981). Motor learning in music education. In R.G. Taylor (Ed.), *Documentary Report of the Ann Arbor Symposium* (pp. 28-35). Reston, Virginia: Music Educators National Conference.

Walters, D.L. (1983). The relationship between personal tempo in primary-aged children and their ability to synchronize movement with music. *Dissertation Abstracts International, 44,* 423A. (University Microfilms No. DA8314378)

Ward, W.D. and Burns, E.M. (1978). Singing without auditory feedback. *Journal of Research in Singing, 1,* 24-44.

Welch, G.F. (1985a). A schema theory of how children learn to sing in tune. *Psychology of Music, 13,* 3-18.

Welch, G.F. (1985b). Variability of practice and knowledge of results as factors in learning to sing in tune. *Bulletin of the Council for Research in Music Education, 85,* 238-247.

FEATURE ARTICLE

The Problem of the Rational in Music

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For over two thousand years, philosophers have sought to know the peculiar character and meaning of the arts as knowledge. Until recently, the search has been primarily one of analyzing and theorizing about the products of artistic efforts, based on introspection or on reports from credible witnesses. The resulting theories of art are concentrated on artistic products. These studies can be categorized, but not neatly so, according to two concerns — the meaning of the work of art itself and the means by which that meaning is obtained.

In order to proceed in a logical manner, one must make assumptions and stipulations. It is in these that one finds troubling elements of arguments about the arts. It is in these that one finds the reasons why the philosophy of art has had little impact on the public's valuing of music in education. Consequently, the intent of music in education has been corrupted into entertainment and pseudo-learning in many schools.

The following discussion is a consideration of a few commonly used assumptions and stipulated definitions that were useful to earlier generations of scholars and teachers but are no longer justifiable. Perhaps it is appropriate to note at the outset that few philosophers of art understand what art is because they have been only observers. Those musicians who have entered the philosophy of art, sometimes in the form of art criticism, have done so via the ideas of established philosophers. Discussions about the arts have been made to fit the logico-linguistic processes of analysts rather than artists.[1]

Commencing with the 18th century, philosophical inquiry into the arts yielded a differentiation of knowledge and inquiry in the arts from the main body of philosophy. One philosopher, Baumgarten (1714-62), thought he had identified the essence that distinguishes art. He named it "aesthetics" from the Greek word for feeling and sensuous perception. This new branch of philosophy was directed toward the "science of beauty"

as compared to the traditional philosophical "science of truth." It resulted in a "criticism of taste" or a "criticism of the beautiful."[2]

In spite of opposition from Kant and others, Baumgarten commenced a mode of inquiry and a stream of thought that separated the arts from the traditional scholar's search for truth. He established or at least reaffirmed the basis for placing the arts outside of rational behavior, and in so doing profoundly reinforced the pariahic posture of the arts in Western institutions of learning. The resulting political posture in education has been an obstacle to the integration of the arts into the social fabric of Euro-American culture. Historically, the objective of Western education has been the pursuit of truth through language, a rational process whose objective character is well-removed from feelings (aesthetics).

When aesthetics became firmly separated as a branch of philosophy in the nineteenth century, it not only pursued Baumgarten's interests but also imbued that pursuit with Romanticism's exaltation of the individual, particularly the artist as *the* purveyor of synthesized emotions. This was reflected in the philosopher's language and in the content of his reported experiences with works of art. The result was a grossly misleading theory of art which, because it had the authority of philosophy, became an established tradition.

In that tradition, it was believed that logic, reasoning, and discursive thought were nonexistent in the arts. Thus, the Platonic/Aristotelian tradition of fracturing the living human organism into separate parts — mind, body, soul, and similarly fracturing the elements of the good life — the good, the true, the beautiful, continued into the twentieth century as the assumptions upon which to construct theoretical statements about art. However, the nineteenth century explanations of art as a phenomenon in the human life troubled those twentieth century minds that recognized in art an order that was not supposed to be in an irrational or nonrational endeavor.[3]

The search for an explanation of art that would withstand obvious questions took a fundamentally important turn in the works of Susanne Langer. She attempted to explain art as a form of knowledge. Langer's significant contribution was the elevation of discourse about the arts to a discussion about the nature of art in terms of signs, symbols, and mental processes that produce artworks in complex forms, as in a painting or in a symphony. Her work explored a theory of the arts as communication.

Although Langer's words are used in the following discussion, the intent is not a critique of her work. The intent is to use her thoughts as illustrations for the argument that follows, namely, that school music suffers lack of support because of the stipulations and assumptions about artis-

tic knowing which underly our culture, and which one is tempted to assert are now culturally 'genetic'. At the least, they are taken for granted and without question by nonartists.

Langer was imbued with the Western philosophic tradition and the stream emanating from Plato's rather neat divisions and heirarchy of knowledge. Artistotle agreed with Plato that the arts were an inappropriate use of the intellect. These formidable minds generated centuries of spurious ideas about the arts in the education of reason.[4] Susanne Langer was a product of that tradition. For her, one infers from her words, listening to the harmonic progression of I-IV-V-I is not a rational, logical, deliberate operation of the mind; rather, it is essentially a matter of intuition with emotion as the content of the act of intuition.

The term *intuition* is one of the words we use as a convenience for those phenomena in the functioning human brain that we cannot describe with our verbal conventions and, given the various kinds of definitions for the term, we do enjoy the supernatural or the fantastic. In problems of art Langer provides an extended discussion of these various kinds of definitions, and then defines and uses the term in this way:

> . . . I do believe, with many aestheticians and most artists, that artistic perception is intuitive, a matter of direct insight and not a product of discursive thinking. . .[5]

> What I mean by intuition is essentially what Locke called "natural light". . . . Intuition is, I think, the fundamental intellectual activity, which produces logical or semantical understanding. It comprises all acts of insight or recognition of formal properties, of relations, of significance, and of abstraction and exemplification. It is more primitive than *belief*, but simply present.[6]

And then applying this to witnessing a work of art:

> . . . artistic perception is directly intuitive, incommunicable, and yet rational.[7]

But then, regarding the rational:

> [language is] . . the symbolic form for rational thought. . . . The structure of discourse expresses the forms of rational cogitation; that is why we call such thinking "discursive."[8]

This ambivalence from a philosophical friend of the arts seems to mean that she was groping for a way out of the classical tradition. That tradition has held that art is not rational and cannot be discursive because language is not involved essentially (here one wonders about drama and poetry and mathematics as well.). To put this another way, art is intuitive because there is no reasoning; that is, the verbal logic which is essential by definition to discursive reasoning is absent.

Langer was one among many to assert that the arts are not discursive in nature. For example, Phenix makes the following distinctions:

> . . . in discursive language the ideas are organized according to the principles of ordinary logic. It is not to be inferred from this that the nondiscursive forms have no logic. They have their own kind of logic, meaning their distinctive patterns and characteristic orders and relationships. They are not haphazard or disorganized. It is simply that their organization does not follow the lines of literal rationality. In this sense they are the modes of expression suited to nonrational (though not necessarily irrational) kinds of experience.[9]

Here again rationality is directly dependent on language. The arts are logical but nonrational. One wonders how any mode of thought in any symbolic or signal system can be logical, perhaps the apex of human intellectual aspirations, and yet nonrational. And Phenix leaves us wondering what he means by irrational as distinct from nonrational.

These examples are not exceptional; rather, they state the foundations of theories of art and philosophies of art. Furthermore, since philosophers are assumed to be the sources of well-considered information, musicians have accepted the premises and assumptions reflected in the thought of Langer, Phenix, and others. Therefore, musicians have embraced syllogistic circular reasoning. Language is the medium for logical thought; logical thought is produced by rational minds; rational thought uses the medium of language; language is the medium for logical thought. . . . Inasmuch as brilliant minds have engaged in this kind of thinking, one is reminded of a remark made by E. Thayer Gaston in a lecture: even the astute mind does not know what it takes for granted.

To synthesize the foregoing, the assumptions of the Platonic, nineteenth century tradition, were continued into this century as fundamental attitudes and beliefs that bear directly upon the place that music occupies in education today. First, there is the idea that intuition exists but needs only verbal definition. Secondly, once direct apprehension (intuition) of meaning in an art work is stipulated, it follows that rational behavior is stipulated as an unnecessary condition for art to exist. This then encourages one to conclude that art is nonrational, and some would argue that it is irrational. Thirdly, it follows that since discursive reasoning is a rational behavior that by definition is limited to literal (linguistic) rationality, such reasoning is not inherent in artistic behaviors and products. The implications of these ideas for the arts in education have been fulfilled in many school systems; either the arts are used as a means of entertainment or they are expendable.

Since these three ideas are fundamental to theoretical statements about art, either in agreement with them or in refutation, they should be examined for their validity. The validity of any hypothetical statement

must be tested within the domain of knowledge occupied by the idea. The question could be asked: is this idea inferrable logically from the knowledge available about the elements that comprise it or is the idea a guess, either educated or *de novo*? The following is an effort to find the validity of the three ideas discussed above.

The idea of intuition as only immediate apprehension (direct insight) is a product of two social phenomena — the state of knowledge about the nervous system at the time the author wrote her observations about art and the state of our language. When trying to describe the immediate impact of an art work, one must find devices for communicating about instantaneous knowing. There is no word for this; there is much in this that we cannot describe or label. Furthermore, our limited descriptors, and their oral or written structure, limit our ability to describe the subtle processive difference between the "aha!" effect in the art gallery and a similar effect in the concert hall, or between that same effect of instantaneous knowing in the theater and in the opera house.

To put this another way, we find the term *intuition* a convenient one to use because it includes so much inexplicable detail. The philosophers of art define intuition as they will use it but do not inform us about what happens in the human head when it *intuits*. Also, in tracing its etymology, one finds the original Latin meaning has been changed by the process of expansion by analogy.

The *Oxford Latin Dictionary* provides the following:

Intueor ~eri, ~itus tr., (intr.) [In + Tuer]

1. to fix one's gaze upon, look at, watch etc.
2. to examine visually, inspect
3. to watch (for action, guidance, assistance, etc.)
4. to be a witness of, observe, see an object or situation
5. (of things) to be turned towards, face; (of a room, etc.) to have a view of
6. to reflect upon, consider, contemplate.
   b. to look to as a model or example
   c. to look upon, regard
7. to take into consideration, have regard to, bear in mind.[10]

The Oxford or Murray *A New English Dictionary* published in 1897 gives the following:

Intuition [a. F. *intuition*, ad. late or med. L. *intuition-em*, n. of action from *intuori* to look upon, consider, contemplate, f. *in-* (In-) + tueri, to look. cf. L. *intuitus.]*

5. *Mod. Philos.* The immediate apprehension of an object by the mind without intervention of any reasoning process; a particular act of such apprehension.

a. 1600 Hooker (in Cottie *Coleridge* II,217)
An intuition, that is, a direct beholding or presentation to the mind through the senses or imagination.
(citations given for years 1600-1860)
b. Immediate apprehension by the intellect alone; a particular act of such apprehension.
(citations given in years 1659-1877)
c. Immediate apprehension by sense.
(citations given in years 1819-1864)[11]

Here the definition changes focus from the act (Latin) to its temporal character and, more importantly, to the method by which meaning is acquired (19th century). During the nineteenth century and into our own time, it was the last of these that became the basis for assumptions about the difference between art and other kinds of knowing.

As one analyzes the writings of philosophyers of art, one becomes disturbed about the kinds of information used to justify arguments. Few seem to realize that all art products come from the human brain, through the various phases of the nervous system, out some externalizing part of the body, and into some amorphous materials, which are refined into a product. [I trust that I have accounted for the major steps.] The issue here is that such a tracing of events is not materialistic because the essence of that which follows the described path of events is ephemeral; we label it "idea." We cannot at the present time explain an idea in terms of chemico-electrical processes — that is, materialistically — although we have known for decades that such processes occur as we think.

While an idea is on its way into an art form, it has to proceed through a complex neural network which sends out numerous signals that the idea is on its way. An idea does not proceed through only emotional pathways or through only rational pathways. There is no evidence that this is true. One is forced, therefore, to find a new set of terms for labelling the nature of an idea. Such a label requires the assumption of the integration or simultaneity of the so-called rational and the so-called emotional. The peculiar result of raising this issue is a wonderment about what is rational and what is emotional. If the one cannot be without the other and the other cannot be without the one, can they be two?

How is it possible for the mind not to function rationally, discursively, analytically, or critically in the creation or the witnessing of an art object? The brain contains an exceedingly fine network of billions of cells each of which functions in milliseconds. Any stimulus entering sensory organs has a variety of pathways to follow that operate simultaneously and in micro-clock time. Thus complex, multisensory experiences can be processed in

milliseconds. Most of our experiences are processed and *then* language is used as an *a posteriori* means of communicating *about* our experiences both within ourselves and with others.

The capability of instant (micro-clock time) reasoning is obvious. It is not correct to describe the "aha!" of the art gallery as an unreasoning operation of the mind, as only perception; there is no physiological or psychological evidence to support such a description. This idea is a relic from days when information about the nervous system and its functioning was sparse. One can invert the preceding argument by asserting that any effort to externalize an analysis of an artistic experience is an operation that is *a posteriori* to the brain's processing of information when the "aha!" effect occurs.

There is a common admonition: "Think before you speak." Of course, one cannot do otherwise; but this parental admonition is an excellent device for understanding the problem addressed here. The inhibiting function we are required to engage in before communicating is simply a search-and-retrieve operation through the limited, inadequate glossary for the arts that each of us carries in our memories. This causes us to search for a way to fit an experience into our language so that we can communicate it, to share it. Consequently, to the aware and conscientious, one might say: try to corrupt an experience with the arts as little as possible when using language to describe it.

It is this problem, the problem of language as a medium of thought and communication, that the philosophy of art or asesthetics has failed to address. Language is not the only medium of communication for philosophical thought. And the vast qualitative range in content that can be communicated through other, nonlanguage, media requires that we reconsider the assumptions underlying aesthetics. One can not describe adequately major musical works, such as those of Beethoven, Shostakovich, or Des Pres, without recognizing processes symbolized by words like discourse, thesis, reason, syntax, rational, logic, and others as well as the usual descriptors that are emotion-laden.

Perhaps a reference to the definition of the term "discourse" will indicate its applicability to the arts, even though the philosophers would prefer to restrict it to linguistic symbolic systems.

> Discourse. L. dis (about or to and fro) + currere (to run), to go about, to go to and fro, to run about to run to and fro; hence to discuss, that is, to talk about, to talk to and fro, a dissertation in which arguments are stated, etc.[12]

The point here is how this term is to be applied. The Romans did not in-

tend that it be restricted to the use of language, as illustrations of its use demonstrate. There is a meta-syntax in the term discourse — the going about and the going to and fro of ideas and theses in human minds — that suggests a reasonable application of the term to musical phenomena. Is discourse, then, the common denominator between music and other modes of knowing, including linguistic systems?

A partial list of assertions about discursiveness in music might include these:

1. A song may be discursive, such as Barber's *Dover Beach,* but this may be due as much to the poetic events as to the musical ones. However, the combination of verbal and musical events conveys a meaning impossible for speech.
2. A double fugue is discursive; perhaps even a single one.
3. In any polythematic work, the development section is discursive if more than one theme is used for the section's construction.

However, it is doubtful that responses to all of the arts can be described with the same specific language. There are fundamental bases for distinguishing one art form from all others, which may be that art form's elemental character. These differences aid in the search for discursive thinking in the arts. Painting is a two-dimensional medium in which artifices are used to create three-dimensional illusions, and this applies to photography as well. Here the viewer's eye, cleverly led by the painter's arrangements on the canvas, moves back and forth (to and fro) gathering meaning from what he sees, as he does in listening to the successions of verbal sounds from which he infers meaning. Since all language is analogous or metaphorical in nature, the tolerance for error in communication is necessarily great, and redundancy through synonyms is a sine qua non of clear understanding. Observing a painting is undoubtedly a better means for receiving communication than is listening to music: the errors are only the receiver's and not both the transmitter's and the receiver's.

Sculpture is three dimensional with a pseudo-fourth dimension to it. If it is placed where the observer can move around it, there may be an illusion of a moving environment. The sculpted mobile is a special case in as much as its quality is directly related to motion in space. A viewer of a work fixed in space, then, uses two discursive means: the reasoning necessary to "comprehend" the work by virtue of viewing it from one position (much like viewing a painting); and the reasoning necessary to "comprehend" the whole, including the sensation of spatial movement, as one moves about the work. Here one moves about [to and fro] collecting and coordinating concepts as one sees fragments in relation to a free-standing entity. As in the case of the traditional idea of discourse, perception and reasoning are necessary.

The sculpted mobile approaches the character of theater, dance, or music. These latter three, the foundation of the performing arts, are three-dimensional but require motion in space. That space may be defined, or as in the ancient amphitheaters, it may be pseudo-defined when performing outdoors. Therefore, these are discursive media due to the physical, human motions [going to and fro as expressive devices] used to articulate the events that communicate the originator's meaning. In lieu of words the mimer creates his sentences through a syntax of actions drawn from a glossary of actions he has seen humans make. That glossary is obtained in the same manner as a list of words; the actions are learned, as is the glossary of chords or timbral combinations that the musician has in his memory. As for logic, this is a matter of social convention, as in the case of the language the philosopher uses to communicate his kind of discursive thinking.

Aesthetics as the study of a mode of knowing is based on a fallacious assumption: the arts are expressive of the emotions and/or feelings of man and are not products of his rationality, of his discursive reasoning. The fallacy is twofold. First, the essence of discursive thought or reasoning is mistaken for the medium traditionally accepted as appropriate for the process. Second, there is a failure to understand what the artist does in his head. For example, in an endeavor as serious and complex as *Rigoletto,* the composer discourses, that is, he debates with himself about the best solution to a musical problem using music as the symbolic system for solving the musical problems that arise; the director debates within hemself and others about musical values in relation to the dramatic ones involved using music, words, and movement; and performers debate about interpretations with alternate renditions of musical passages in their minds. This kind of behavior is logical going to and fro with a solution or an answer as the objective; it is historically the essence of the meaning in "discursive."

Phenix states that the arts have a logic of their own. That this is true is attested to by the numerous volumes in which harmony and counterpoint, and resultant structures, are explained. Each of these methods for making music has sets of assumptions inasmuch as there is not harmony and counterpoint but harmonies and counterpoints. These are systematized *a posteriori* to the creative acts of composers who created within sets of mores.

The issue raised by Phenix is a frustrating one: what is the nature of the logic the musician uses; is there a fundamental logic; is there only culture-bound logic? Furthermore, it is this that bewilders our friends in philosophy: would any series of events in music be logical if it were not satisfactory as a succession emotionally? This then leads to the philosophically stunning question about a logic of the emotions, which

Peter Schickele violates with relish. But the separation of a musical idea into rational and emotional components experientially is nonsensical, as is the reduction of that experience to only emotion.

Historically, the term "aesthetic" was a useful choice for the nineteenth century approach to the arts. Now, we have more information about the operation of the central nervous system and are in need of terminology that denotes the artistic. Especially, there is a need for a language with which to communicate more correctly about the kind of thinking one does as an artist. The terms "discursive" and "intuitive" as the philosopher defines them no longer are applicable to the arts. However, they might be useful if by their use one symbolizes the essential behaviors they symbolized in their ancient meanings. Also, our concepts of art have changed as to the kinds of experiences we accept as art. The arguments of aestheticians do not account for the 'intellectual' character in much that one hears from contemporary composers or sees in museums, etc. One can argue that any structure that is satisfactory is necessarily rational in design; sufficient satisfaction seems to be an intensely personal matter. But traditional aesthetic arguments do not account for either of these conditions.

The state of music in contemporary American education, a century and a half after its introduction into public school curricula, suggests that illogical arguments from authoritative sources do have their effect. In spite of the great amount of musical activity that children and adults need in their lives, the *academic respectability* of music remains uncertain. Such respectability is a social contract, and can be either formal or informal with the latter usually preceding the former. Given the history of beliefs about [philosophies of] the nature of music and its relationship to the intellect, it seems evident that the argument must be changed to one that has a realistic basis in what human beings are. A social contract for a curriculum cannot be founded on such key terms as nonrational, irrational, intuition, nondiscursive, etc. when Western education has been a massive, persistent process toward the ideal of rational behavior. The test for rationality has been in human behavior. Human behavior is a product of the human organism with its integrated nervous system, its singularity. It is most unfortunate for children that Baumgarten and his successors did not understand this.

Endnotes

[1]For example, see Bennett Reimer. *A Philosophy of Music Education*. Englewood Cliffs, N.J.: Prentice-Hall, Inc. 1970.

[2]*A New English Dictionary on Historical Principles;* founded mainly on the material collected by The Philosophical Society. Edited by Dr. James A. H. Murray, with the assistance of many scholars and men of science. Oxford: At The Clarendon Press, 1897. See also Bernard Bosanquet, *A History of Aesthetics from the Greeks to the 20th Century*. New York: Meridian Books, 1957, pp. 182-187.

[3]For example, see Anton Ehrenzweig. *The Hidden Order of Art: A study in the Psychology of Artistic Imagination*. Berkeley, California: University of California Press, 1971.

[4]Cady. Music in Liberal Arts Colleges etc.

[5]Susanne Langer. *Problems of Art*. New York: New York: Charles Scrioner's and Son's, 1967. p. 61.

[6]Langer. *Problems of Art*, p. 66.

[7]Langer. *Problems of Art*, p. 69.

[8]Langer. *Problems of Art*, p. 164. N.B. Langer did not change her position regarding this in her later works.

[9]Philip H. Phenix. *Realms of Meaning*: A Philosophy of the Curriculum in General Education. New York: McGraw-Hill Book Company, 1964, p. 82.

[10]*Oxford Latin Dictionary*. Edited by P.G.W. Glare. Oxford: at The Clarendon Press, 1982, p. 955.

[11]*A New English Dictionary*, 1897, p.

[12]Murray, *A New English Dictionary*, p. 430.

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FEATURE ARTICLE

Music Education and Philosophy

Richard Colwell
University of Illinois

Bennie Layman recently was appointed an assistant professor at Eastern State University and assigned to teach music education methods. In preparing course objectives, Bennie surveyed the literature and consulted with colleagues on the content that must be covered in a methods course. What should a young teacher be prepared to teach? How to listen to music; how to practice; diction, articulation, intonation, fingerings, breath support, and more for performance; knowledge about music history, theory, performance practices, and what it's really like in the schools; methods and techniques like Suzuki, Kodaly, breath impulse, and Holt-Rinehart; models of teaching for different students, gifted, disadvantaged, handicapped, normal, and upper class; how to use the guitar, recorder, Autoharp, and piano to enhance learning; teaching materials inclusive of ethnic musics, folk, rock, jazz, classical, choral, band, orchestral, small ensemble, as well as patriotic songs; how to motivate, change attitudes, influence the emotions while maintaining discipline and a healthy classroom environment; integration of concepts with other school subjects; and, of course, the knowledge of how to teach everything to facilitate transfer of learning. All essential.

In a recent article[1] I argued that the primary purpose of program evaluation in education was to make political, not educational, decisions. The political dimension of education is not limited to decisions about funding of programs and the adoption of revised curriculums; one's philosophy of teaching is inseparable from one's philosophy of life, and in the United States one's philosophy of life can be seen most graphically in one's view of the role of government in our lives. Further, one's educational philosophy, which is usually closely related to one's political philosophy, is the most important dimension of teacher education and therefore deserving of seminal consideration in the preparation of teachers. Bennie's decisions concerning what to teach, the priorities he assigns to objectives, and his approach to teaching future teachers how to teach are based on his educational-political philosophy, a philosophy that is likely developed

mostly by "happenstance." The purpose of this article is to describe the advantages of a particular political-educational philosophy and the consequences of an inadequate philosophy.

Our failure to consider philosophy in music education is understandable. Musicians have so many pressing performance concerns that they find themselves isolated from daily political concerns. Tradition rightly perceives the artist as remaining above the more telluric aspects of life, but such isolation, even though understandable, is inappropriate and destructive in the educational arena. Music may be a heavenly event but music teaching is an important and realistic part of everyday life.

A functional philosophy of education certainly does not have concerns identical with those of political parties but it does have many similarities to a broad political philosophy. One's beliefs about how American society should be organized, what should be the role of those who govern, and how this society should change to meet technological and social changes influence both the way we teach and the way we vote. The fact that we often fail to give overt attention to our beliefs or to be aware of the implications of our actions does not negate the importance of the philosophical-political dimension of education.

By the same token, we are misguided if we refuse to recognize the facts of educational philosophy. All education is moral education, and even if they wish to, schools and teachers cannot eschew their role and responsibility toward that moral education. Every decision Bennie makes about his methods class is permeated with his own moral values. Teaching is a public activity and the underlying goal of any teacher is to change student habits, dispositions, and values, be he working to improve a student's skill or a group's performing ability, to increase understanding or to alter attitudes. When teaching is effective this change is purposeful and results in common student values. The effective teacher may not wear his value system on his sleeve but his value system will not only become apparent to his classes and the community, it will also serve as the driving force behind all of his pedagogical activities. We must realize that music education is one part of formal schooling in America, schooling supported by a citizenry whose primary concern for the schools is that they aid in the establishment of governing arrangements and the enactment of policies that proscribe, manage, regulate, direct, and reward behavior to the end that, over time, each student becomes more like the (moral) model envisioned by that American society.

Often the prospective music educator does not come in contact with concerns for moral education in Bennie's methods class or any other. The music teacher has been taught by default that a philosophy of education is only peripheral to the teaching of music, and can be safely ignored.

The music teacher has been taught by default that a philosophy of education is only peripheral to the teaching of music, and can be safely ignored. The literature and practice in music education seldom address social concerns and when they do one is led to believe that schools and teachers must be neutral, carefully avoiding any suggestions about our own life style, values, and preferences, the teacher's role being the conveying of objective ideas and skills that will facilitate the natural development of the child's musical interests and insights.

Teachers and schools, however, can never be neutral; education is an active endeavor towards real goals such as reaching and cultivating the best persons and the best in persons. A student interacting with a machine is not in a value-neutral environment, and certainly the interaction between teacher and student is a moral as well as an intellectual/musical encounter. The objectives of any class reveal not only instructional objectives but an underlying belief in the importance of the human spirit. In fact, all of American education is based upon the premise that man is a social creature and education improves, enlightens, and enhances participation in the social (that is, human) experience. American education, including music education, has followed the ideas of Aristotle, Hegel, and others in the belief that the value of one's life is to some extent a function of association with persons of similar moral construction supported by a morally compatible community. Music is not just sweetened fluff like the pressurized whipped cream that graces the dairy delight at the local ice cream emporium, a treat without nourishment or substance; nor does music's place in American schools resemble the philosophy under Marxism, where the development of human nature is governed by the iron laws of the means of production. If it were either of those an argument could be made for neutral values, but it is not. Music objectives include more than the recognition or production of separate musical elements. Music education as practiced in this country consists of varying degrees of interaction between student and teacher, the student endeavoring to become more like the teacher in skills *and* understanding. Good music education is not student centered. As Sidnell reminds us, it is the teacher who molds, shapes, manipulates and defines the quality, content, and organization of school experiences.[2]

Establishing the centrality of the teacher in music education is essential to my argument. The expertise of school administrators, the research of the profession, and casual observation indicate that music learning, more than any other subject, is dependent on teacher qualities. Even athletic teams survive longer with average instruction than do music programs. The characteristics of the music teacher influence outcomes more than do equipment available, administrative support, texts and materials used, background of the students, or the objectives stated and lessons planned. Well-established programs that have flourished for years in a community

can crumble quickly with a change in only one variable — the teacher. Further, excellent and good music teachers are distinguished not so much by their intelligence or their musicality as by other qualities which are often referred to as "personality." Personality, however, is only a part; the essence is a teacher's philosophy of education. A job analysis reveals that the important task in music teacher education is not the inculcation of music theory, history, or applied music but the teaching of those values, morals, and ethics that will enhance the teacher as role model and facilitate the teacher's primary task of molding the values of students consistent with the values of American society.

The importance of a philosophy of education that is compatible with a philosophy of music education, then, becomes the keystone in teacher education. Relying on aesthetic education for one's philosophy of teaching allows one to escape the difficult question of morals education, as aesthetic education can be theoretical and fairly neutral. Aesthetic education which is based on the purpose and function of society, however, cannot be neutral. "Purpose" implies objectives and methods, which do not exist in a void but by their nature must be consistent with the social arrangement of society and with the philosophy that generates the desired goals, a philosophy based on liberal, conservative, or neo-conservative ideals.

Failure to decide among the above three ideals as a basis for philosophical action is just as much a decision as choosing a planned course. As the saying goes, "not to decide is to decide." Failure to address value decisions in teacher training does not lessen the consequences of a teacher's actions, as all action is based upon an educational or social philosophy. The schools themselves enhance and perpetuate a philosophy and are nourished by the prevailing climate in the community.

The music teacher's philosophical orientation, liberal, conservative, or neo-conservative — in terms that describe in American society the allocation of resources as well as a social structure — has more impact upon the outcomes of his or her instruction than do the teacher's "personality" attributes, attributes that are overemphasized because they are often an important *part*. Priorities, allocation of time, and beliefs — all stemming from philosophy — dictate action. Yet it is the personality attributes of teachers which often are emphasized not only in teacher training classes but from administrators who evaluate and describe teachers; teachers are supposedly easy or tough, clear or fuzzy, authoritarian or democratic, enthusiastic or torpid, accessible or distant. A veritable science has been made of desired attributes of the humanistic teacher. Knowledge of the negative aspects of sarcasm and impartiality has a place in teacher education, but discussion of personality attributes (about the only departure from content) is a poor substitute for a concern for a sound and realistic educational philosophy with which the content is interwoven. Bennie's

social philosophy and orientation will have the major impact upon the outcomes of his methods course and, in turn, the learning of his students. The long range impact exceeds the influence of context oriented objectives.

Obviously, a teacher's personality is important; extroversion-introversion and field dependent-field independent characteristics need to be explored in research and instruction along with the attenuation of the teacher's natural mean streak. Modeling, however, is such an influential part of teaching that the values and morals of the prospective teacher should be a prime consideration in any teacher education program. Values and morals are not genetically determined; they are culturally based and can be influenced and changed by well thought-out teacher education programs. The traditional goals of methods courses are of secondary importance to the goal of making the preservice teacher aware of how important his or her cultural philosophy is, and the impact that philosophy will have on the way instruction is conducted and on what the student learns.

Our failure to grapple with and advocate a particular political persuasion for teachers has been partially due to the belief that a teacher's actions should not be circumscribed by a philosophical label. Further, the folklore would have education soaring above all cultural and philosophical labels to free the mind, spirit, and soul.

The freest thinking individual, however, is never free of his beliefs and his philosophy. His moral being and principles are what promote constructive thought. Labeling makes sense, whether one is labeled a pragmatist, a realist, or a communist, because our ideas, objectives, and philosophies are not random. We cluster our ideas, our values, and our thoughts about education because clustering allows the mind to think more clearly. Genres, historical periods, and tonal qualities are not the only areas where classification is helpful. Clustering is useful both at the philosophical and the practical level, allowing for deeper, more introspective, and more creative thinking.

A philosophy of life, of education, and of music education is at the core of enlightened instruction. The basic shortcomings of the music program cited by Sidnell — vagueness of purpose, misplaced emphasis, and lack of sequence — result in large measure from the lack of a clear political philosophy by most music teachers.[1] Within the American framework choices are not made on Marxism-Leninism vs. Jeffersonianism; the choices stem from either a liberal, neo-conservative, or conservative philosophy. The argument being made here is that indoctrination of a conservative philosophy of education is most appropriate for music education.

Let me repeat: the philosophical choices bearing on teaching fall into

the three major categories of liberal, conservative, or neo-conservative. The distinctions among these philosophies can be clearly seen in educational practice. At present the liberals are in considerable disarray, with few champions remaining for open schools, flexible standards and goals, and a passive or resource role for the teacher. Although there may be much to recommend in a liberal philosophy, this philosophy has been replaced in 1987 by neo-conservatism. The basic difference between the two remaining philosophies for the music teacher focuses on the answer to the questions of what education can and should do.

What music can and should do for the American student and citizen is also the fundamental question in deriving a philosophy of music education; therein lies the obvious tie between political-cultural philosophy and educational philosophy. President Reagan as the leading political neo-conservative would give music educators a simple answer as to what we should do; he'd say that music education should do everything. The political persuasion of neo-conservatism believes that one can spend more and tax less; achieve more with less support; strengthen all levels of education, public and private, at no detriment to any link of the educational process. These neo-conservative ideas about the schools could hardly come at a worse time for music education. Along with increased high school graduation requirements and stiffer standards for college admission, there is less federal money, more demands on local governments, and a smaller percentage of taxpayers with children in public schools. In music, the demands are no less global; multicultural education, arts in general education, and programs for the gifted and the handicapped. Traditional requirements have increased as well: more performances at athletic events (male and female); more appearances of the madrigal and swing choirs either to raise money or to maintain the school's presence in the community; all coming at a time when there are increased academic standards for all students accompanied by the student's need to have a job to pay for the material necessities of today's teen-age culture. The neo-conservative does not hesitate to ask the teacher to plug all of the gaps in the social structure as he attempts to create his ideologically congenial world. The folly of encouraging prospective teachers to be neo-conservative is apparent when one analyzes the writings of philosophers in music education in terms of the broader cultural context. Leonhard and House argue persuasively that objectives must be attainable by the means available. Unfortunately they fail to relate these decisions to one's educational-cultural philosophy.[4]

Reimer discusses philosophy of education based on the aesthetic experience. He does not, however, attempt an answer to one of his fundamental question. "Given the varying capacities of people, given the limitations of time available for study, given a wide range of interest and desire, how can one share what is most valuable about one's subject with most people

in the most effective way?"[5] The answer to this important educational question is dependent upon the user's having a disciplined political philosophy anent the purpose of education. The decisions required in answering Professor Reimer's question can be made intelligently only on the basis of one's social-cultural philosophy, an answer which also determines the focus of teaching and learning in music. Sidnell did not focus on philosophical issues but his philosophy is pellucid in his writing and teaching. "Establishing what music can and should do is fundamental to decisions, even decisions on methodology. It should be clear that writing goals and objectives is equivalent in importance to the teaching process itself."[6]

Among music educators the conservative philosophy has not been convincing or appealing. It has taken little more than casual suggestions to incorporate into the curriculum folk music of all lands, popular music, rock and jazz while at the same time embracing the allied arts, creativity, gifted programs, programs for the untalented, and the integration of objectives from several other subjects stretching beyond art and dance to include social studies, personal conduct, and a bit of reading. To accommodate the plethora of objectives, swing choirs, jazz bands, madrigal singers, guitar, piano lab, and so on have been added to an already building curriculum. With younger students singing and listening are now accomplished by recorders, Orff instruments, pattern recognition, and eurhythmics along with a teaspooon of creativity and improvisation. Not one example occurs in the literature where an addition to the music program *replaced* an earlier objective or experience, and there is scant evidence that increased staff resources or time have accompanied the neo-conservative binge.

The real conservative in music would not believe that we should chance sacrificing musical import to appease the many voices with their appealing suggestions for additional objectives and experiences. The conservative music educator would model his behavior on the musicologist who has remained faithful to a more narrow musical focus in his systematic inquiry after knowledge.

If the conservative philosophy prevailed in teacher education, our primary task would be to define music education's real interests and to reduce our commitments. One's philosophy serves to aid in resisting encroachments on our time, time which is severely limited both in our schools and in our lives. A conservative philosophy of education would require that priorities be addressed and established. Every teacher would know whether knowledge of an Eritrean folk song was vital to his music education program, whether understanding the concepts underlying contemporary electronic music was crucial, and he could more easily decide his action if accepting computers in the music classroom meant trading in a saxophone for a canned program on a PC.

A conservative philosophy helps in other ways besides rejecting the advances of amorous suitors. One can use it to appraise the present program. Music educators often act as if credit lost for an ensemble, school time reduced, or loss or the privilege of giving grades means that the music program will sink rather than swim, wither rather than flourish, or die rather than survive. We also occasionally suggest that if the orchestra program disappears music education is hopelessly lost for all time in that community. A conservative-social philosophy of music education would enable us to distinguish between that which is vital and that which is desirable.

We must remind ourselves that the basis for all decisions, especially those in education, is the cultivation and conservation of desired values, not the presence or absence of isolated events, subjects, or individuals. A music program based on values requires that each teacher have a well-developed value system about music education and life, one that he or she is not afraid to share with students. As George Will suggests, men and women are biological facts but ladies and gentlemen fit for self-government are social artifacts, creations of the law.[7] A music education program does not satisfy any philosophy if students complete school as young men and women who have only had interesting and rewarding experiences in music; a sound music education program with a focus on the aesthetic requires social intervention. Sidnell said as much when he informed us that teachers teach best those things they believe in most. Active teacher intervention is requisite to attaining reasonable student behaviors in the process of a normal 13-year course of study in music.[8]

The objectives most important in music teacher training are not what to do on Monday or what should be on the Christmas program but the refinement of musical values, values that come from a commitment to the teaching of and about fine music. Philosophy and objectives for school music are crystalized through the process of selecting those musical values that are to be encouraged and internalized. The appropriate model is that of the musicologist who searches continually for meaning in music, who critiques performer, performance, and performed on the basis of the past and present. The musicologist, who is conservative by training, like the proposed conservative music educator strives for an intellectual rather than a sentimental encounter with the past.

The love for learning that music educators prize is invariably based upon a human model we have known. It is a commitment to cultural values that impresses us most about a teacher, and the awareness of this commitment is the lasting impression. In reflecting upon the teachers who have had the most influence on our lives, consensus centers on those teachers who selected attainable objectives, objectives they believed in and objectives for attainment of which they communicated a sense of

importance. Even professional teachers do not often long remember the teaching techniques, the materials used, or the delivery of the master teacher; memorable teachers often differ in these respects but memorable teachers do not differ in their commitment to a value-saturated subject matter. Sidnell reminds us that a school music staff must plan a program that is realistic to the situation and must avoid visionary proposals designed to please administrators and school boards.[9] Interest groups of all shapes and colors play a role in curricular decisions; computer buffs champion objectives that are best taught by machine (music theory) while "Orffers" want the student to improvise and create. Conservative music teachers have concern for music with value.

Music teacher education, however, consists primarily of methods courses where students are taught to discriminate among song book series, instrumental method books, conducting gestures, and teaching techniques, e.g., Yamaha, breath impulse, or Kodaly. Methods, techniques, and tricks-that-click contribute to an endless stream of items for study, with new materials being continually written; the myriad techniques devised by a clever teacher on the spot to handle a specific situation are reported, and speculation about different children and differing situations is endless. Thus the music teacher learns that the heart of music education is the *process* with almost no concern for the *value* offered by music or the role music plays in education.

Conservatism would not mean a subordination of the individual to society but a healthy accommodation between the individual and society's continuity. A philosophy provides perspective. Little of real value to music education was lost when the materials in Allyn and Bacon's song book series were no longer available. The transitory nature of pop rock and many folk songs argues against placing undue importance on the learning of these materials. Only philosophy provides an individual with a basis for self-confidence and confidence in the value of one's life and work. Two avenues are available to the teacher/educator to infuse important ideas and values: direct instruction and assimilation.

Direct teaching may not be as efficient as enculturation in inculcating a philosophy of education and a philosophy of music teaching but both methods are to be used. The present lack of a philosophy is evident in Reimer's statement that "it would be difficult to find a field so active, so apparently healthy, so venerable in age and widespread in practice, which is at the same time worried about its inherent value".[10] Reimer is remarking about music educators, not the musicologist, performer, or composer. Music educators must give attention to decision making, how one decides what is essential to the survival of good music and what the relationship is between the survival of good music and school teaching responsibilities. Sidnell suggested that music teachers should always be thinking about

what must be deleted or added. At the time he wrote, it was the nature of curriculum development to add, not to take away or restructure, and the momentum of this neo-conservative philosophy has increased in the past 15 years. "If something new in the way of objectives is to be added to the curriculum, one must investigate what kinds of classes could absorb these new objectives *by deleting '. . . .content. . . .' or objectives less valuable.*" The watchword of conservatism is efficiency in instruction; efficiency is a primary obligation for those associated with the instructional planning process.[11]

The music educator is charged with shaping how students perceive and react to music, not with attainment of clapping patterns or skill in moving to music. The second objective of a methods course following the inculcating of a conservative philosophy is to teach students, not how to judge whether the method is working or not, but to determine how well the pupils perceive. Preservice teachers easily obtain a false sense of priorities when the interest of the profession is in the percentage of students in secondary school music programs or teachers' test scores on the NTE or GRE, facts which provide no information about one's depth and understanding of the characteristics that distinguish great music. Music is important to American society not because we are never more than a few seconds from it — in our radios, cars, elevators, telephones; music is important to an advanced society because of the roots it establishes with the *human* past.

Society is not merely a cross section of the present; society consists of a portion of the objective achievement of the past. When music is championed as self-expression its role in society is as an activity or experience, rather than a human achievement. When great music is missing from a music program, lesser music has a field day. In the early 1970's Sidnell reminded us that instructional time is precious and limited, and that nonmusical objectives can dictate content that is clearly not germane to the general goals of music education.[12]

In my own household only our youngest daughter still believes that it is possible to have everything in life — all the beauties, pleasures, and physical objects — without sacrificing time, effort, or money. We think of her actions as being immature and naive yet the music education programs advocated by many professional educators reflect this philosophy. In the practice of such a philosophy we observe that all music is of equal value; experiences are valuable in themselves; and that standards are infeasible and undemocratic, made by those who don't know children or who have not had recent classroom experience. Personal survival (of the teacher) ranks ahead of musical or educational standards. The fear of imposing one's own values upon innocent children is a major concern of teacher education programs. Endless activities of repeating

rhythmic patterns on a xylophone, making up trivial melodies, and perceiving the presence or absence of selected musical elements are "safe" aims of a music program. But the achievement of these aims is devoid of any moral meaning. The goals championed are those which are most value-free. Everything is to be devoid of additions; no salt, sugar, or phosphates, please.

But is this sterility what parents want for their children? Do parents actually think such activities lead to enlightened cherishing?

Teachers, as agents of the state, have as their primary task moral education, which for the music educator consists of providing responsibly for musically gifted children and ensuring that the best of our musical heritage, past and present, is conveyed to all students in sufficient depth that lives are changed. Excellence is important in education but especially in music education, because of the fact that excellence is essential to musicians in both product and performance. Of course, if one defines excellence carelessly and casually, justification of any one objective or activity is possible with everyone attaining excellence.

Excellence or quality has bypassed many school music programs, no doubt for a variety of reasons. The underlying reason, however, is the lack of a working cultural philosophy of life that undergirds the art and/or music that is taught. A philosophy of music education cannot stand alone, unsupported by a political/cultural philosophy, as it cannot provide by itself a focus or a set of priorities for music *in* education.

Teacher education, like music education, is in trouble not only because of an absence of a philosophy but because of the confusion of neoconservatism with conservatism. Teachers "talk" about basics, general education, and programs to facilitate integration, concept learning, cultural awareness, and motivation but the concern of teachers remains on the extrinsics of test scores, school attendance, and drop outs. Neither in the schools nor in the institutions that train teachers is there a concern with establishing priorities and making learning more efficient. How many colleges have abandoned string instruction or a graduate program despite a shortage of students and/or funds? We want it all with no culling out of the less worthwhile. Citing examples of individuals and governments who run up huge debts, appointing endless study committees, and wearing out innumerable prayer rugs without making the decisions that a true conservative would make is easy; these are the general practice today. Without a viable cultural philosophy on which to base educational philosophy and music education philosophy, the choosing of objectives and experiences is only an exercise, a making of decisions without value. For example, the objective to do one's best has meaning only in a specific situation and in a morally based context. Sidnell's call for a total review

and possible redirection of the music curricula[11] cannot be met without first accepting the consequences of answering the question "What do we want our students to be like?". This answer will not include the fellow whose achievement was to play the Minute Waltz in 50 seconds or to know all three verses of the Star Spangled Banner. The answer to what our students should be like is based on a human dimension. The question that we ask ourselves, "What do we want our students to be like", cannot be answered by substituting "Who do we want our students to be like". *What* implies the moral and value-rich dimension of the human experience, and offers to music educators a role where they must be willing to be involved with the most important music and willing to expect their students to jump in and join them in the search for the best in our democratic culture.

References

[1]Colwell, Richard. *Program evaluation in music teacher education. Bulletin of The Council for Research in Music Education,* Bulletin 81, Winter 1985, *18.*

[2]Sidnell, Robert, (1973). *Building instructional programs in music education.* Englewood Cliffs, Prentice Hall, *1.*

[3]Sidnell, Robert. *op cit., 12.*

[4]Leonhard, Charles and House, Robert, (1972). *Foundations and principles of music education 2d ed.* New York, McGraw Hill Book Co.

[5]Reimer, Bennett, (1970). *Philosophy of music education,* Englewood Cliffs, Prentice Hall Inc., *113.*

[6]Sidnell, Robert, *op cit., 42.*

[7]Will, George F., (1983). *Statecraft or soulcraft.* New York, Simon and Schuster, *90-91.*

[8]Sidnell, Robert, *op cit., 67.*

[9]Sidnell, Robert, *op cit., 66.*

[10]Reimer, Bennett, *op cit., 3.*

[11]Sidnell, Robert, *op cit., 63.*

[12]Sidnell, Robert, *op cit., 63.*

[13]Sidnell, Robert, *op cit., 22.*

FEATURE ARTICLE

Evaluation in Music Education: The Value of Measurement/The Measurement of Value

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My good friend and teacher, Robert Sidnell, had a favorite story about the importance of measurement. The story begins with the chance meeting of an inchworm and a bird. The bird, recognizing the inchworm as a tasty morsel, informs the inchworm that he shall be eaten as a snack. The inchworm, being a quick-witted sort, says, "Don't you realize that I am an inchworm and can measure anything for you? Here, let me tell you how long that glorious beak of yours is before you eat me". Whereupon, he climbs onto the bird's beak and measures its length. The bird, most impressed and flattered by the outcome of the measurement, decides that the inchworm is far more valuable as a measurer than as a snack. The inchworm is taken to the bird colony and after completion of various impressive feats, such as measuring the stork's leg length, the buzzard's wingspan, and the diameter of the eagle's nest, is made the resident measurement expert and declared exempt from the peril of being eaten. Quite a long time passes, and the inchworm enjoys his pampered status. For very little effort he is rewarded handsomely. One day, however, a lark arrives and, upon being informed of the inchworm's valuable skill, asks, "Can you measure my song"? The inchworm replies that he can, but that the lark must sing as long and loudly as possible. While the lark sings and the other birds sit enraptured by the beautiful song, the inchworm quietly sneaks away, never to return. The lesson is, of course, that the measurement expert knows better than anyone that some things simply cannot be measured. Had the inchworm promised to evaluate rather than measure the song, he might still be enjoying his place in the bird society.

Those of us involved in music education endeavors such as measurement, evaluation, and assessment would do well to heed the lesson of the inchworm. In our efforts to gain and retain acceptance in university and public school curricula we have adopted the "rules of the academy" and tried to show that the arts, specifically music, can be like other academic subjects. An important and justifiable aspect of this has been demonstrating that music education activities and programs can be evaluated successfully. After all, the message is clear that the subjects considered truly

important in education are those that are evaluated. (It is fine to insist that "music is basic," but when state and national assessments are made, what subjects are included?) Important risks, however, are associated with an inadequate perspective of measurement and evaluation in music. We could confuse the two, and fail in attempts to measure the unmeasurable. Or we could limit evaluation to an extension of measurement, and ignore the qualitative dimension that makes music unique and important in the first place. Still another possibility is that music educators, not having adequate evaluation tools, could simply abandon attempts at evaluation and lose the esteem of educational decision makers.

In this article, an attempt is made to explore some possibilities for a rethinking of evaluation in music education — more specifically, the relationship of evaluation to testing and measurement, and to axiology, the study of values. The ideas are not new, but a return to previously-stated concepts is sometimes refreshing, particularly when they appear to have been forgotten to some extent in practice. I wish to address concepts of evaluation in general rather than specific evaluation applications, such as program evaluation, teacher evaluation, or student evaluation. However, specific examples of these applications will be used.

The Problem

While writers about evaluation in education and music education seem quite willing to define measurement and evaluation different from one another, there remain in the literature some contradictory tendencies. Among them are the use of the two terms interchangeably, the implication that evaluation is an extension of (or necessarily presupposes) measurement, and the assumption that evaluation, being subjective, is never based on observable criteria and therefore must not be as precise as measurement. The following examples are not atypical:

> In modern educational terminology, "measurement" has been largely superceded by "evaluation," which implies a value judgment beyond an ordinary quantitative determination. Although this book is concerned primarily with written tests of aptitude and achievement, it also includes some discussion of subjective, non-verbal evaluations in music. Regardless of the nature of the data or how they are obtained, it is their skillful interpretation that is the key to the entire *process of measurement.* (Lehman, 1968, p. x) (emphasis mine). . . . All of the functions of evaluation are fulfilled in a far more useful and meaningful way by means of quantification. (p. 4)

> "Evaluation" goes beyond measurement in that value judgements are involved. We measure a student's abilities in different areas. When we interpret these scores in terms of standards for his grade, in terms of his educational or vocational plans, or some other basis for making value judgements, we no longer are restricting ourselves to "measurement"; we are now "evaluating" his abilities or his progress. (Adams, 1964, p. 5). . . . Sometimes measurement and evaluation seem to be inseparable. (p. 6)

My intention is not to refute the above statements. When considered in context, they seem appropriate enough. They do, however, tend to lead the reader to the conclusion that measurement should be the starting point for evaluation, that quantitative information is always superior to qualitative, and that subjectivity is somehow more nebulous and less stable than objectivity and therefore should play no part in evaluation. These conclusions are open to question.

The Elimination of Nonmeasurables

In writing about systems approaches to educational planning, one eventually presents the following scheme: a philosophic stance generating goals (broad and unmeasurable), that in turn lead to objectives (specific, implying their own measurement), that form the basis of planning, implementation, evaluation, and feedback. In theory, such a scheme would have evaluation based on some philosophic stance, although several times removed. In practice, however, once the objectives have been determined, the philosophy and even goals often seem not to be revisited for evaluative purposes. Because the objectives, if acceptable, are measurable, evaluation is based on the objectives alone. Evaluation, then, is based on or perhaps even replaced by measurement. Any components of the original goals that are not measurable cannot, by definition, be included among objectives, and so are usually assumed to be addressed indirectly through the summation of objectives, written off as nebulous and therefore unimportant, or simply forgotten. A recent personal experience demonstrates how easily this happens. I was contacted by the commercial educational evaluation firm hired to construct the teacher competency tests for Texas. Their request was that I serve on a team for the purpose of "content validation and standard setting." Included in my packet of materials were several pages of objectives on which test items are to be based. The task, of course, is to examine the items and determine whether they match the objectives. No mention of goals was included. The objectives were generated by a different group of participants.

This elimination of nonmeasurables leaves the progression of events for evaluation similar in many ways to be progression of events for too many music education research attempts:

1. Identify measurable variables
2. Select variables to be measured
3. Measure
4. Interpret results (evaluate).

In this progression, measurement clearly constitutes both the starting point for, and the basis of, evaluation.

An Alternative: Evaluation as a Test of Isomorphism

If evaluation in music education is viewed as an extension of a philosophic stance rather than of measurement, a different approach to evaluation arises. A well-thought-out ontologic, epistemologic, and axiologic position should form the basis of ideal constructs (of the "musically educated" person, the ideal music teacher, the ideal music program, etc.). Evaluation can then be considered a comparison of the observed construct with the expected, or ideal, construct. This "goodness of fit" approach should yield results ranging from total fit, or isomorphism of observed and expected constructs (Isaac & Michael, 1982, p. 3), to no fit at all.

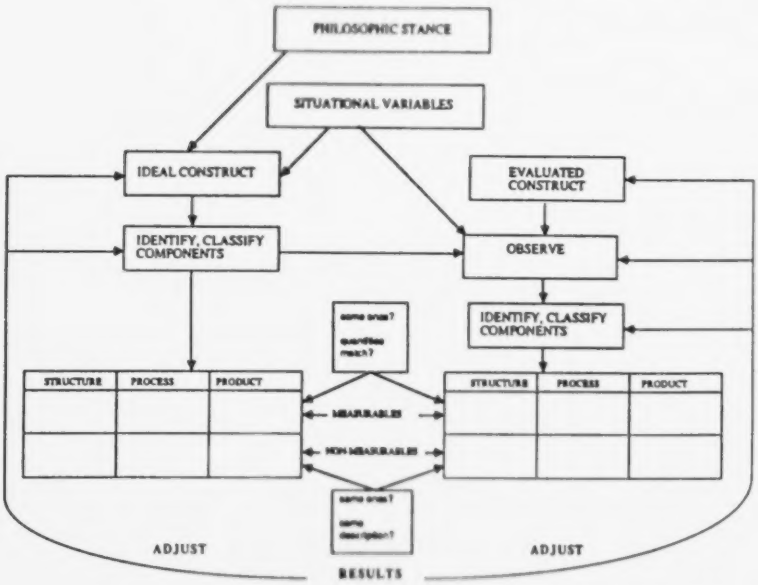
In many respects, this approach to evaluation is reminiscent of the process identified by some perception psychologists as "analysis by synthesis" (Neisser, 1967), wherein learned rule systems allow the individual to synthesize structures that serve as templates against which to compare incoming information. The hypothesis is that using this "goodness of fit" technique allows perceivers to make sense of (recognize, sort, classify, evaluate, etc.) novel sensory input. This hypothesis would account for our ability to name the style period, composer, or even the performer of a work we have never heard before. If would also allow us to evaluate the quality of a musical performance.

Although perhaps overly simplistic and outdated, the analysis-by-synthesis paradigm, itself a sort of personal evaluation model, suggests a generic model for evaluation that merits consideration. I use the term "generic" because the model seems to apply to the evaluation of anything, and to evaluation situations ranging from the most formal and long-term to the most informal and "on the spot."

As shown in Figure 1, the model has as the starting point a philosophic stance (or if you prefer, life-space, worldview) which is filtered through situational variables (e.g., local conditions or the type of thing being evaluated such as a junior high school band performance, a college music department) to yield an ideal or expected construct whose components are identified and classified (including extra-verbal indicators such as recorded performance examples). Such components are classified as structure, process, or product variables, somewhat as in the CIPP Model (Stufflebeam, et al., 1971). They are further classified as measurable or nonmeasurable. The result is a matrix of components.

Observation of the construct to be evaluated is designed taking into account both the nature of the new construct and also those components of the ideal construct that have been identified. This observation, followed by identification and classification of components present in the new

FIGURE 1



construct, yields a matrix of components comparable to that of the ideal construct.

Direct comparison of the variables in the "ideal" matrix with those in the "new" matrix allows decisions about goodness of fit. Important questions concerning the measurable components are, "are the same ones present?" and, "do differences between ideal and observed quantities (maybe scores or distributions) fall within acceptable limits?" Corresponding questions concerning the nonmeasurable components are, "are the same components present?" and, "do differences between ideal and observed descriptions fall within acceptable limits?".

The model is dynamic (cybernetic, self-adjusting) in that the results of each evaluation provide feedback for both the ideal and observed sides. Adjustment of the evaluated construct, of course, would place the evaluation in the "formative" rather than "summative" category. Other feedback and possible adjustment is important, however, both for the other components on the "observed" side and for all components of the "ideal" side. Such feedback allows for formative evaluation in a different sense — an appraisal of the evaluation itself with respect both to procedures and to the ideal construct and its generation. One would expect

the amount of such adjustment to decline across time — that is, both the ideal construct and observation procedures should gain stability with increased usage. For example, the experienced NASM evaluator or choral festival adjudicator would be likely to change his expectations less with each evaluation than would the novice. On the other hand, one would also expect that the amount of adjustment would never reach zero.

Measurement as a Prerequisite of Evaluation

In the proposed model, measurement can be an important part of evaluation, but is neither the starting point nor the sole component. In fact, the possibility exists for evaluation devoid of measurement, depending on the variables identified as important. In reading Colwell's recent (1985) article on program evaluation in music, I was reminded that for the pioneers of music testing, evaluation, albeit informal, surely preceded measurement. Only after detecting lack of fit between expected and observed music behaviors would they have decided that there was anything to measure. My assumption is that this is the case in most evaluation situations: measurement does not enter the evaluation model on the initial cycle but instead is introduced with later adjustment.

The Articulation Problem

The main problem with attempting to include non-measurables in an evaluation scheme is not one of precision, but rather one of articulation. A carefully-derived indicator of a quality, even though not expressed in numeric terms, need be no less precise than a quantity expressed as a score. There remains, however, the problem of articulating such constructs in a manner easily communicated and promoting wide acceptance. A score, after all, is more easily communicated and supposedly better understood than a qualitative indicator. This articulation problem has been a major contributor to the educational community's dependence on scores for evaluative purposes. The example of the graduate student whose curriculum is altered on the basis of one score point on a questionable (or worse, unquestioned) placement test is all too familiar. If those at all levels in music education had access to a range of well-articulated indicators and standards for nonmeasurables from which they could select portions for evaluation purposes (probably to be combined with appropriate measurables), better and more evaluation in music education would be likely to occur.

Some examples of well-articulated standards exist. *The School Music Program: Description and Standards* (MENC), 1974) provides an excellent starting point for the "structure" portion of one "ideal" matrix. Various

state and local curriculum guidelines contain descriptors of processes and student achievements that include but go beyond the mere counting of behaviors. These might be used to fill other cells of the same matrix. For worthwhile evaluation, however, a large number of widely-accepted alternatives appropriate for constructing complete "ideal" matrices should be available.

Research and Evaluation

Research and evaluation are commonly coupled as pursuits. School systems have departments of research and evaluation, and books are devoted to "research and evaluation." Unfortunately, the coupling is too often perfunctory. Some school systems attempt evaluation devoid of rigorous research as we know it; the books have an isolated chapter or two on evaluation but treat research as an unrelated topic.

One important relationship of research to evaluation should be the contribution of research results to "ideal" matrices for evaluation and to the related observation techniques (measurement or other). A concerted attempt to identify and articulate nonmeasurable components of the various constructs (musical, personal, program) associated with music education is worth considering. Such an effort would incorporate both descriptive research and the considerable body of existing research results. The effort, aimed at the eventual wide-spread acceptance of indicators and standards, might prove fruitful to members of both the music education community at large and the music education research community.

References

Adams, G.S. (1964). *Measurement and evaluation in education, psychology, and guidance*. New York: Holt, Rinehart and Winston.

Colwell, R.J. (1985). Program evaluation in music teacher evaluation. *Bulletin of the Council for Research in Music Education, 81*, 18-62.

Isaac, S. & Michael, W.B. (1982). *Handbook in research and evaluation*. San Diego: EdITS publishers.

Lehman, P. (1968). *Tests and measurements in music*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Music Educators National Conference National Commission on Instruction. (1974). *The school music program: Description and standards*. Reston, VA: Music Educators National Conference.

Neisser, U. (1967). *Cognitive psychology*. Englewood Cliffs, NJ, Prentice-Hall, Inc.

Stufflebeam, D.L., Foley, W.J., Gephart, W.J., Guba, E.G., Hammond, R.L., Merriman, H.O., and Provus, M.M. (1971). *Educational evaluation and decision making*. Itasca, IL: F.E. Peacock.

FEATURE ARTICLE

Research and Music Education: Needs for the Next Decade

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Music education research needs to be expanded and better integrated into the profession during the next decade. This expansion and integration will serve several important needs. It promises to help improve professional practice by providing data which will help music educators provide better service to their clients — the students, schools, and communities where they work. It promises to provide data which will help professional music educators answer questions about the outcomes and accomplishments of their work. Research data should help the field meet expectations of accountability and evaluate its position in the schools and in the educational process. Expansion and integration of research promises to help the field fulfill its ambition to be a fully-recognized profession by developing the data base which underlies knowledgeable, skillful, and artful professional practice. It promises to increase practitioner satisfaction by enhancing ability to provide excellent service and providing data concerning the results of that service.

Opportunities abound. The current situation provides strength and momentum on which to build. A competent, although small, research industry exists in the profession. This industry is growing in sophistication and vigor. Increasing research activity and ferment appears in the growing number of research journals, the MENC's Special Research Interest Groups (SRIGS), the research sessions as professional conferences, and the increasing number of research reports submitted for presentation at national, regional, and state conventions.

Reliance on scientific research data represents a belief system. The scientific system evolves. Earlier in Western civilization science believed in a search for "absolutes," for answers which would be valid and applicable in all situations, contexts, and times. When data showed that the facts believed to be "absolutes" were not always true, the quest became a search for "near-absolutes," and then a search for regularities. The current belief searches for "probabilities," for answers couched in the con-

text of "chances are. . ." Regardless of the nature of the ultimate goal, research generally pursues several important objectives. They are (1) a means of increased understanding through structured, careful, description; (2) a means of increased predictability through understanding; and (3) a means of increased control. The research process in Western civilization has focused on controlled qualification and quantification, controlled observation and measurement. Each professional field has gained increasing predictability and control (has "progressed") as it has developed precision in observation and measurement of important factors. The process typically has been: (a) identification of important factors; (b) these factors described and separated; (c) these factors quantified; (d) relationships and interactions among these factors examined. This belief system, a reliance on scientific research, underlies attempts to develop the data base needed for improved music education.

SOME CONCERNS ABOUT MUSIC EDUCATION RESEARCH

Several factors and concerns underlie the need for increased research and integration of results into professional practice for music education's next decade. The primary factor is the need for additional knowledge. Although much is known, many areas important to effective music education are relatively unexplored. Basic assumptions underlying professional practice need examination. Facts that were applicable in prior times may no longer be appropriate because the world itself has changed.

Some perceived practitioner attitudes about research raise concern. From one perspective, research seems to be viewed as being relatively unimportant. It is difficult to cite examples of music educators who, upon encountering a problem in their professional practice, look first to research results in their search for a solution. It is also difficult to find examples of music educators who seek out professional researchers and encourage them to undertake specific studies to find solutions to specific problems.

Regardless of attitude toward the importance of research, some practitioners seem uncomfortable with their skills and abilities to analyze published research reports and apply the results in their own teaching. Repeated efforts have attempted to overcome this problem by "dissemination" efforts. In the 1970's, MENC published the "From Research to the Classroom" series; the journal, *Update*, plays a role. Most recently, the research columns in the *Music Educators Journal* provide assistance.

From another perspective, a major function of research seems to be as a step (or perhaps a "hurdle") in earning a doctoral degree. Dissertation research reports comprise a major portion of the studies published in some music education research journals. The topics of some of these studies, although usually of specific interest to the student and advisor,

often do not seem to be problems of major concern to the profession. A substantial amount of the work done for doctoral dissertations does not achieve publication in professional research journals. A substantial proportion of the individuals who perform dissertation research and earn doctorates apparently do no further research during their professional lives; perhaps this is due to job circumstances, perhaps to attitudes about research, or perhaps to other factors.

The research industry's small size raises concern. The majority of music education researchers are doctoral students or their advisors. Research is a primary and continuing focus of effort for only a few of these individuals. Other researchers include other faculty members in comprehensive research universities and a relatively small number of teachers in other educational institutions. A few music-related businesses, such as instrument manufacturers, do research important to music education. Professional organizations such as MENC support research, and groups such as the American Music Conference provide useful descriptive data. Several related disciplines including education, psychology, music therapy, physics, electronics, and sports medicine also support research which contributes to the data base needed for effective professional practice in music education.

The major problems and issues in music education are not easy to identify from a review of published research topics. Landmark studies — classics in the field — are not abundant. Current major problems, those which might parallel major health problems in medical research, do not seem to be identified. There seems to be minimal attention to sorting out the major factors important to the field. Perhaps attention needs to be given to identifying what new knowledge is needed to improve professional practice. What common-sense beliefs need examination? What needs to be described, predicted, or controlled?

An additional concern arises from the "nay-sayers." A few individuals may take pessimistic views, saying that the important things in music education are impossible to measure. Some believe that the absence of effective answers to some question must indicate that such answers cannot be found. Some will accept only evidence which can be "observed" by raw sensory perception (while physical scientists often predict and control effectively on the basis of data only indirectly perceived — images of subatomic particles and the like). Some fear that knowledge will damage feeling — that description, prediction, and control will somehow reduce aesthetic response.

A final concern is the current training of music education researchers. Although increasing numbers of individuals are becoming sophisticated and active in doing research, the need remains great. The small research

industry, and the absence of a strong positive attitude toward research in the profession at large, means that financial and affective rewards for research are rare. The present music education curriculum in elementary school, secondary school, and college does not provide structured instruction and practice in music-oriented research processes.

CHALLENGES TO MUSIC EDUCATION RESEARCH

The concerns listed above offer challenges and chances for development. Many opportunities exist to improve the profession's research situation. Further excellence can be built on the strong existing foundation.

The profession needs to identify and examine major factors of prime importance to improved music education practice. Positive research attitudes need to be strengthened, and the research skills of general practitioners and research specialists further developed. The size of the music education research industry should be increased.

Positive research attitudes may be pursued in several ways. The goal for general practitioners might be to view existing research information as a major source of answers to problems in their practice, and to expect professional researchers to be a resource for pursuing those answers that do not appear in the literature. In essence, research needs to be viewed as useful. Modeling might be an effective way to improve positive research attitudes. Preservice and in-service music educators need to see many models of positive research attitudes in action. They need to see their teachers and other leaders regularly use and cite the research data which supports their professional activities. These leaders might frequently refer problems for which research answers do not exist to professional researchers. Such modeling, visibly done, might influence attitudes toward research.

Music teacher training curricula could be revised to include chances for students to do research themselves. The present college curriculum for music teacher preparation contains very little orientation to research. Perhaps some structured research training would be helpful. One model — used primarily in the social sciences — is to offer a specific class about research methods and techniques. Another model — used primarily in the natural sciences — is to integrate an appropriate research component (often a laboratory) into many classes. In the research components, students learn about research by doing it. Often they replicate basic studies which underlie the course's content. This model has specific courses about research late in the curriculum sequence, if necessary. The specific courses focus on advanced skills which build on the general research knowledge and attitudes developed throughout the curriculum.

The natural science model may hold promise for nurturing improved research attitudes among those preparing to become music educators.

In addition to helping prepare practitioners, the natural science model might help develop professional researchers. It would provide many opportunities to practice — many "research etudes" — throughout the entire music education system. One peculiarity of the curriculum as it now exists is an interesting contradiction. The profession insists that practice is necessary to become an excellent performer. It provides many exercises, etudes, and study pieces for students. Yet the doctoral dissertation is sometimes one of the first attempts an individual has made at doing research; still it is expected to be a major work and make a substantial contribution to knowledge. Dissertation studies might be improved appreciably if the researcher's background had included more practice of research.

The music education research industry might be expanded. The profession could encourage music education departments in comprehensive research universities to place added emphasis on basic and applied research activity. Such a differentiated role might provide a distinctive characteristic for that institution's music teacher preparation program. Additional research support could be sought from the music industry. Music education is an equipment-intensive field. Manufacturers and distributors of printed music, instruments, recordings, audio/visual equipment, synthesizers, and music books have a vested interest in the profession and could be sources of research support. Other businesses and foundations are resources that could be pursued.

Music education research seems to be thriving. The professional data base is broader, more detailed, and more precise than it has ever been. Practitioners and researchers are growing in sophistication and competence, and there seems to be growing interest in using research. The research enterprise offers many opportunities to help music education meet the challenges and influence the changes of the coming decade.

FEATURE ARTICLE

Do Our Models for Music Research and Teaching Reflect Our Human Social Nature?

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A good friend and oftentimes mentor to music education research, Bob Sidnell, continually challenged us to question our notions of music education and to examine the premises for our music research and teaching. As he so cogently expressed at the Ann Arbor Symposia (1981):

> Believing that music education is a study of the nature of, and modification of human music abilities, I am thoroughly convinced that we need to fashion a rational framework upon which a fabric of process can be woven to effect well-directed change in the people we teach. It is all about theory (p. 175).[1]

This paper entertains just such questioning with the objective of arguing for models of music instruction and music cognition that reflect the universal, social nature of our music expression.[2]

To begin, let me present a paradox: Music expression is a social behavior specific to our human species, yet we teach music and conduct our music research as if it were a specialized skill reserved for a select few. The first personal awareness of the ramifications of this paradox began with my initial music education training based in the Southwest where success in music teaching was highly competitive and most often measured by one's ability to win superior ratings at marching and concert festivals. My awareness expanded with the experience of teaching music in Micronesia to a multicultural population of Filipino, Korean, Guamanian, a mixture of Trust Territory cultures and students from the United States mainland; attempts at teaching Western notions of music and music appreciation were at the same time rewarding and discouraging. The unsettling factor was the pervasive element of Western music chauvinism.

Three years were spent at the Southwest Regional Laboratory (SWRL) working as part of a government-funded team developing the SWRL Music Program, a curriculum tailored to the general classroom teacher. Here the paradox was directly confronted. Could a baseline music

education be taught daily in the classroom by a nonspecialist? Though successful in its research form, the program was never published. Most recently the awareness has been through an involvement with computer-based instruction and the experience of seeing various music education myths dispelled as young children — working with computers — successfully perform music skills traditionally reserved for the specialist: harmonic dictation, error detection, and sight singing to name but a few.

There are a number of different tacks one might take in attempting to understand this paradox. The particular tack chosen for this paper comes from a perspective of music education and psychomusicology; one could just as well argue the issue from the perspective of aesthetics, ethno- and sociomusicology, or philosophy.

First, examine the notion that music expression is a social behavior unique to the human species. The psychologist, Robert Bolles (1975), proposes that each species has certain behaviors which are instinctively in the organism's repertoire (species-specific behaviors) and that the organism is highly prepared to learn these behaviors and less prepared to learn others, i.e., pigeons can easily learn to peck but are abysmally poor at learning to press bars. What might be the species-specific behaviors unique to humans? Some would suggest language, organized imagery, dance and/or ritual and, apropos to the topic at hand, music expression. John Blacking (1973) in his book, *How musical is man?*, suggests that ". . .music, like language and possibly religion, is a species-specific trait of man" (p. 7). We can find support for this notion in the writings of Susanne Langer (1948 and 1964); Lewis Mumford (1967) in his book, *The myth of the machine,* and from the psychologist, Roger Shepard. At the Ann Arbor Symposium, Shepard (1981) argued that "the fact that music in some form is ubiquitous in human culture indicates that these musical predispositions, or at least some more basic rhythmic-auditory predispositions, have contributed to human survival" (p. 153). Langer and Mumford go so far as to suggest that music may have preceded or, at least, accompanied the development of language. Mumford (1967) outlines a transition — entirely speculative — from gesture and bodily motion to dance and song, and from song to speech.

The psycholinguist, Roger Brown (1981), reinforces the notion of our species' pervasive music bias:

> Music is separate from language and like it in being an irreducible mode of mental operation. There are artifacts suggesting the existence of music for as long a period as there are clear signs of the human species. And human societies with no music, like human societies with no language, have never been found. It even, momentarily in my opinion, seems that music has a better claim than language to be considered uniquely human (p. 8).

Based solely on anthropological evidence, irrespective of the sequence as to how it came to be, there is support for a theory that music expression in some form is a natural, species-specific behavior of people: one that should have a functional role in our social behaviors, and one that we might be well prepared (in Bolles' terms) to learn. This position suggests that music expression is as necessary to our human survival as are math, reading, and writing skills — the so called "basic skills."

Examine the other side of the paradox: the charge that we teach music and conduct our music research as if it were a specialized skill reserved for an elite few. This charge is based on an observation that as students progress through our music education system, more and more drop out of music activities; fewer students — those who excel in performance — remain in the music curriculum. Our system is structured as a pyramid. We start at the base with a general music program teaching singing, aural discrimination of melodic, rhythmic, and harmonic configurations; simple note reading; and accompanying with Autoharps, rhythm instruments, and the like (all potentially functional skills for social participation in music). We end at the top with highly skilled performance ensembles made up of a select few.

I was unsure as to whether published support existed for this particular, biased view of our music education process. The following comments speak for themselves [italics added for emphasis].

The music educator, Charles Leonhard (1981), speaking at a Loyola Symposium:

> [Music education has become] overly specialized, seclusive and *essentially elitist* in conception and operation. . . We concentrated on the development of limited musical skills useful in attaining high standards in large group performance; we neglected to provide for the *development of broadly functional musical skills* which establish a basis for musical independence and lifelong participation in music (p. 36).

Robert Sidnell, music educator and researcher, at the Ann Arbor Symposia (1981):

> I think most [music] education is based on the house of music knowledge, which has many rooms. We talk about rhythm, melody, harmony, form, and color; but we do so without reference to *people* (p. 175).

The anthropologist, John Blacking (1973):

> . . .we must ask why apparently general music abilities should be restricted to a chosen few in societies supposed to be culturally more advanced. . . Must the majority be made "unmusical" so that a few may become more "musical"? (p. 4)

And, the composer, Paul Hindemith in *A composer's world (1961)*:

> . . .the nonprofessional, the man who wants instruction for his own amateurish fondness of playing with musical forms, hardly counts at all. . . .the clan of music teachers is now living in a state of ever growing artistic isolation and infertile self-sufficiency (p. 205).

Further evidence for the lack of training in functional music skills can be found in the results of the 1972-73 National Assessment of Music Performance (1974). Even though we may question the nature of the test items used, the results showed that most people could only sing *America* and repeat a rhythmic phrase at best. "Very few individuals were able to accurately sight-read a line of music, either vocally or instrumentally" (p. 29).

One might ask whether a similar bias exists in the music education curriculum of other countries. Daniel Remeta (1974), as a guest of Kabalevsky, studied the Soviet music education system. A general music education including one hour per week of singing classes is offered to Soviet children in the general education schools up through grades seven (age 13). Grades eight through ten offer elective music classes and activities. At any time however, children may audition for entrance into the specialized children's music school or the secondary music school in preparation for continuing on to the conservatories or the institutes of pedagogy, performing arts, or culture. "The music training of the semiprofessional and professional musician," Remeta indicates, "is accomplished through a broadbased, pyramid-type structure of special music schools" (p. 298). However, in the Soviet Union, out-of-school [nonprofessional] music organizations complement formal school training in the "mass-musical education of the Soviet youth and adults" (p. 298).

At least in Western cultures, we seem at the simplest level to make a distinction between a pedagogical approach which emphasizes specialized and technically refined music skills (the *professional* approach), and an approach which emphasizes the functional skills related to social needs of expression (the *lay* approach). Paraphrasing Charles Seeger from a 1978 UNESCO paper, tradition has it that the professional teaches music to the professional, and the layperson teaches music to the layperson and his children (p. 89).

At a second glance the professional/nonprofessional distinction appears to be much more complex. What we may have or should have are pedagogical attempts to deal with music along a continum of human response to music beginning, as Hindemith (1961, p. 22) suggests, with "a primitive participation in music founded on mere associations of motion" and ending with more complex tasks which demand cognitive understand-

ings of the music structure (what Hindemith describes as the "simultaneous and parallel mental construction of musical form's sounding entity with all its ballast of temporal proportions, harmonic-tonal implications, and melodic lines"). Traditional education in music appears to deal with a segment of the upper end of this continuum, with finer adjustments made up or down depending upon the concentration, e.g., music education, musicology, theory, or performance. Where the lower segment begins for lay apprehension of music is poorly defined and oftentimes ignored.

Now that I've presented the paradox, am I going to propose a solution? No. I cannot advocate the total elimination of our current approach. It is naive simply to suggest that we should abandon the "professional" modes of music education in favor of teaching functional music skills with an objective of social music expression: accompanying skills, basic aural skills, singing. There is no simple solution. The professionals only know how to train the professionals; we only know the model we have so carefully constructed for ourselves. It will, no doubt, take a revolution — a total change in the philosophy of our pedagogy. Seeger (1978) argues that "a new type of lay teacher must be evolved — one who can utilize some of the professional techniques but who will steadfastly resist the effort (that has failed disastrously) to cast layman and his children into the mold of the utterly incompetent professional" (p. 90).

How do we then proceed? Sidnell reminds us that it is "all about theory." We must proceed to build from a foundation of data ("a rational framework") obtained from our best efforts at systematic research; that includes research in pedagogy, ethnology, sociology, psychology. We have little data as to the characteristic nature of people's social music expression.

The measurement specialist would say that it is a question of *construct validity*. We need an agreed upon model or construct that describes human response to music as it exists in our species — a cross-cultural construct. Such a universal construct (even if it only represents our best guess at the moment) would seem to be a requisite step in assessing the validity of how we teach music and the questions addressed by our music research. A sample of dimensions that might be part of such a universal construct could be a sensory or perceptual dimension; a formal, syntactical, or conceptual dimension; and an expressive dimension (See Campbell & Heller, 1981, and Williams, 1982, for a discussion of two proposed models for such a construct).

The lack of a universal construct for explaining musical behavior speaks to the paradox; the construct underlying traditional pedagogy does not fully account for music responses made by the general

populace (e.g., folk, rock, pop, country-western). It speaks to why formal institutions of learning (the professionals) teach from a music curriculum that often ignores, rather than complements, music learned through extra-curricular activities. It speaks to why the National Assessment of Music was viewed skeptically — the same problem we have had with state-level assessments of music education and the many notable attempts to measure music ability. How can we assess music performance or aptitude when we have little consensus as to the nature of the behavior we set out to measure? Again, that is formally labelled (and the research concept we have so often ignored) construct validity.

The lack of a universal construct speaks to the issue raised by David Butler (1980) at the College Music Society conference in Denver; the poorly defined and indiscriminate use of the terms, "trained" and "untrained" musician, that we use in our research. It speaks to the "strange" populations used in our research — populations which parallel the pyramid model of our curriculums. At the end of the pyramid, our research looks to either the undergraduate music students or the psychology students as subjects for study.

I have thought a good deal on the feasibility of proposing that we attempt to build such a notion as a universal construct for music behavior; one that would be broad enough to account for all human response to music (to account for the theory that music pervades, and is an instinctive expression of our species). I'm not sure the notion is realistic. Let me share with you some thoughts as to what problems we might encounter:

> The construct would have to deal with a large degree of variability in human response to music. We may argue that music is a pervasive behavior in people, but experience tells us that the trait manifests itself in quite varied forms. The continuum offered by Hindemith must take into account the simple response of *movement* (e.g., tapping your foot to music) at one end, and a *cognitive understanding* of music's structure at the other. Shepard (1981) suggests this dispersion in ability is due to the fact that music is not as essential to human survival as are spatial and linguistic competencies. This recommends that our tradition of normalizing our data into group generalizations may be 'clouding' our sensitivity to inter- as well as intra-cultural differences in response to music.

Parallel to this notion of variability is the question of states of learning preparedness. Are people prepared to learn some music skills more than others? Is this the clue to social music skills (those which people are most prepared, as a species, to learn)? Is the easiest or most natural music skill listening as some would have us believe? Or is it participation — psychomotor involvement? Are people of some cultures predisposed to

learn some skills more easily than others? Further, we must entertain the notion that Hindemith's continuum is bidirectional. Some people may operate more readily at the 'cognitive' or analytic end of the continuum than at the 'movement' end.

The construct would have to be based on universally defined dimensions for measuring response to music, dimensions which are valid across cultures and styles. We speak often these days of cognitive structures and schemas for music. Are there universal structures in human music processing? Blacking (1973) asserts that "essential physiological and cognitive processes that generate musical composition and performance may even be genetically inherited, and therefore present in almost every human being" (p. 7). Perhaps music is not the universal trait, but the "rhythmic-auditory predisposition" as Shepard (1981) proposed or more simply, I might suggest, the ability to temporally organize sonic events, be the end-product music or language.

The construct would have to explain the anomalous music behaviors that keep haunting us: absolute pitch, persons with little formal training improvising and playing by ear, so called "natural rhythmic" response, photographic music memory ability. How do we explain them? Underlying these plus-three-standard-deviation types of behavior may be clues important to our construct.

End of comments. Maintaining Sidnell's spirit of challenge to question what we are about, I have shared some thoughts on the apparent conflict between the instinctive nature of people to express themselves musically and the narrow bandwidth of music expression we deal with in our research and teaching. I offer no solutions, only comments with the hope of keeping the issue alive and preventing the myopia that so easily entraps our practice. I invite readers to give serious thought to the notion that until we can describe music behavior in universal, nonbiasing terms, we still do not understand the phenomenon upon which our livelihood, music teaching and research, is based.

Footnotes

1. As a matter of record, there was no planned collaboration with James Carlsen to use the same opening quotation for our articles. The humor in this bit of extra-sensory journalism, however, is the similarity to a situation between Sidnell and myself at the Second Ann Arbor Symposium. Sharing a room in Ann Arbor, we both arrived having anguished through the last-minute syndrome of preparing our papers for the Symposium. We immediately swapped papers for a quick, confidence-lifting appraisal, only to find that both of us had based our remarks around the sage wisdom of characters in Carroll's *Alice in Wonderland*. *Alice* became the most popular reference source of the Second Symposium.

2. Portions of this article were presented at the College Music Society Conference, Cincinnati, Ohio, October 1981, under the title, "Do we train people out of music: A comment on the neglected role of social music skills."

References

Blacking, J. (1973). *How musical is man?* Seattle: University of Washington Press.

Bolles, R.C. (1975). *Learning theory.* New York: Holt, Rinehart, and Winston.

Brown, R. (1981). Do we need a psychomusicology? *Psychomusicology, 1*(1), 7-11.

Butler, D. (1980, November). [Question-and-answer comments at a research session] Denver, Colorado: College of Music Society Conference.

Campbell, W. & Heller, J. (1982) Psychomusicology & psycholinguistics: Parallel paths or separate ways. *Psychomusicology, 1*(2), 3-14.

Mumford, L. (1967). *The myth of the machine.* New York: Harcourt, Brace & World.

Hindemith, P. (1961). *A composer's world.* New York: Doubleday & Company.

Langer, S.K. (1948). *Philosophy in a new key.* New York: Mentor Books.

Langer, S.K. (1964). *Philosophical sketches.* New York: Mentor Books.

Leonhard, C. (1981) Lifelong learning in music: A challenge to music educators. In *Proceedings of the Loyola Symposium IV* (pp. 33-39). New Orleans: Loyola University.

National Assessment of Educational Progress. (1974). *The first national assessment of musical performance* (Report No. 03-MU-01). Washington, DC: U.S. Government Printing Office.

Remeta, D.R. (1974). *Music Education in the USSR.* Doctoral dissertation, University of Southern California.

Seeger, C. (1978). The musician: man serves art; The educator: art serves man. [Reprinted from the *UNESCO COURIER VI* (1953)]. *International Society for Music Education Yearbook, 5,* 89.

Shepard, R.N. (1981). Individual differences in the perception of music pitch. In *Documentary report of the Ann Arbor Symposium* (pp. 152-173). Reston, Virginia: Music Educators National Conference.

Sidnell, R.G. (1981). Response to R.N. Shephard. In *Documentary report of the Ann Arbor Symposium* (pp. 174-178). Reston, Virginia: Music Educators National Conference, 1981.

Williams, D.B (1982). Auditory cognition: A study of the similarities in memory processing for music tones and spoken words. *The Council for Research in Music Education Bulletin, 71,* 30-44.

FEATURE ARTICLE

Children's Rhythmic Tapping: A Critical Review of Research

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Rhythmic performance is a basic component of musicality. Interestingly we still know little about the fundamental nature of children's rhythmic abilities. A few empirical studies by musicians and music researchers have been published (see the review by Sidnell, 1979). In addition, related information has been extrapolated from research in kinesiology, psychology, child development, and neurophysiology. Since the topic of rhythmic ability is broad, the terminology varied among fields, and the issues confusing, this article, rather than being comprehensive, will review and critique only studies of finger or hand tapping performance. Omitted are studies dealing with clapping, foot tapping, head nodding, singing, playing, stepping in time to music, or tapping while simultaneously performing some other task.

The choice of focusing the review on studies of rhythmic tapping performance may appear limiting to music teachers who teach rhythm skills using a variety of activities. This emphasis, however, is useful for understanding the relevance of current findings to music eduction and in providing conceptual frameworks for developing new teaching techniques.

Completed research can be grouped into three topic areas: (1) the physiological limits of tapping, (2) tapping rhythmic responses, and (3) the impact of training on performance.

Tapping Norms

To the music educator, studies which measure children's maximum tapping speed may appear unimportant. Researchers are often not concerned with the effects of learning, extended practice, previous musical experience, and the particular cultural backgrounds of children. Instead they seek baseline information about fundamental neurological processes by studying speed and accuracy of motor response. In kinesiology, this interest has often meant tapping "as fast as possible" (AFAP) thus providing insight into children's ability to perform rhythm patterns. Such information about children's tapping speed is basic to designing and inter-

preting rhythm performance tests. Teachers need to be aware of children's physiological limits. For example, children may be unable to perceive dotted rhythm patterns but be unable to produce them because they cannot tap that fast.

In tapping norm research, variables studied include age and gender differences (Denckla, 1973; Kinsbourne & McMurray, 1975; Spreen & Gaddes, 1969) and the effects of hand dominance (Denckla, 1973; Kinsbourne & McMurray, 1975; Maxwell, 1981; Spreen & Gaddes, 1969). Some studies also examine different types of AFAP tapping tasks such as tapping by the index finger compared to tapping with the little finger and other joints. Because tapping norms have been measured in so many different ways, the measurements reported in this paper have been standardized to taps per second where 60 quarter notes per minute equals one tap per second.

Comparisons of studies of tapping norms must be made with caution because of the differences in the equipment used for measurement. Some researchers have measured responses electronically, while others have relied on a stopwatch to measure children's tapping speeds.

Children tap faster as they get older. Tapping ability increases from the preschool level (reported as ranging from 2.2 to 2.6 taps per second) (Denckla, 1973; Maxwell, 1981) through grade ten (between 6.5 and 7.3 taps per second) (Ruffer, 1985; Ruffer, Grapenthin, Huey, & Patterson, 1985). Older children's tapping movements are also smoother and more continuous (Kerr, 1975; Schellekens, Kalverboer, & Scholten, 1984).

Researchers disagree as to whether one sex taps faster than the other. Denkla's (1973) research of five- and six-year-olds found girls to be faster than boys on a successive finger tapping task. But she observed no gender differences in a forefinger-to-thumb task. Spreen and Gaddes (1969) found six-year-old girls to be "slightly" faster than boys. The reverse was true for eight- to thirteen-year-olds. Kinsbourne and McMurray (1975) however, recorded no significant differences between six-year-old boys and girls. Ruffer and colleagues found inconsistencies due to gender from grades one through four (Ruffer, 1985), but that boys were significantly faster than girls in grades five through ten (Ruffer, 1985; Ruffer et al., 1985). Whether or not significant differences exist between boys' and girls' tapping performance abilities at different age levels is still open to question. The inconsistent results may be due to dissimilar methodologies.

In contrast to studies which exclusively examined one-handed tapping abilities, Maxwell (1981) included two-handed ability, a task more relevant to musicians. He observed that five-year-olds were able to alternate their index fingers faster than when they were required to tap both of them simultaneously. Slower tapping speed was associated with greater

degrees of lateral asymmetry. Maxwell stated further that three-year-olds were not able to alternate their fingers successfully. He theorized that children do not begin to attain the neural maturity to accomplish this task until at least five years of age.

Hand dominance tends to be clearly established by ages five to seven, with the dominant hand able to tap faster than the nondominant one (Denkla, 1973; Kimura & Davidson, 1975; Kinsbourne & McMurray, 1975; Spreen & Gaddes, 1969). Manual asymmetry appears to be influenced by both task and practice, particularly in preschoolers (Annett, 1970).

What can be inferred from the findings of tapping norm research? Young children have more trouble tapping faster, tapping simultaneously with both hands, and tapping with their nondominant hands than older children. Based on present research, young children appear to lack coordination to perform anything beyond the simplest tapping tasks. Elementary and preschool music teachers may have to adapt certain musical tasks to take these developmental differences into consideration.

Rhythmic Tapping

Because of the nature of the questions being investigated in the tapping norm research, there was no requirement that the tapping be rhythmic, that is, periodic, or in synchrony with a stimulus in a musical or rhythmic context. To a musician, rhythmic performance is much more than the correct ratio of taps to one another. Analysis requires comparisons of taps in relation to the neighboring taps as well as to the metric context. Tap tasks must be patterned in a musical way, that is, have subdivisions which are perceivable within a metric context. Because both the tapping norm and the synchrony studies were concerned with basic neurological processes, and not with musical questions, some "rhythm pattern research" may be neither rhythmic nor patterned (Spohn, 1977). One must be careful not to assume that the term "rhythm" is being used in a musical sense.

Careful study of how children gain rhythmic ability demands precise quantification so accurate comparisons can be made. Since the difference between correct and incorrect tapped responses for a fast dotted-rhythm pattern may be as small as a few milliseconds, little faith can be placed in studies in which the methodology consists of a researcher simply listening to a child and subjectively deciding whether the response was correct or incorrect. At the very least, a tape recorder should be used to allow later verification and analysis of the results. Yet more desirable is computerized data collection.

Computer-assisted measurement, while giving us greater precision, poses problems of its own. Most computer programs are not sufficiently

flexible to allow for the inevitable performance variability, and often must be supplemented with visual inspection. Researchers relying solely on computer measurement might not be able to score variation in tempo separately from variation in rhythm. Some existing mathematical models which have been used for this kind of measurement are simply inappropriate. To have more flexible and realistic measurement, researchers have sometimes had to rely on time-consuming hand scoring or on the development of more sophisticated programing. Even so, the problem of tap variability remains difficult to resolve.

For the purposes of music research, it would seem important to apply a musical model of accuracy to children's performance. Researchers examining rhythmic accuracy have thought in terms of strictly timed, mathematically precise intervals. Because of this assumption, they have claimed that neither children nor adults are able to perform such intervals accurately (Heinlein, 1929; Stetson & Tuthill, 1923). Later researchers found that skilled musicians are not only able to perform with two hands in strict metrical relationship to each other but can vary these intervals systematically and consistently across performances (Bengtsson & Gabrielsson, 1980; Gabrielsson, 1982; Shaffer, 1981).

Thus far, the discussion of rhythmic tapping research has been concerned primarily with problems of methodology and measurement. This research is twofold, tapping in synchrony, and tapping in imitation.

Tapping in synchrony.

Studies of synchronous tapping require that children tap simultaneously with a periodic stimulus, which in musical terms is a series of evenly spaced, unaccented quarter notes. Other studies have required children to identify and tap along with recurring motives heard in a musical context (Cox, 1977; Thackray, 1972).

The factors which have been investigated include age, experience, sex, tempo, and the effect of practice. There is little information about hand dominance or one- versus two-handed tasks. Although children's accuracy has been found to increase with age (Cox, 1977; Jersild & Bienstock, 1935; Williams, Sievers & Hattwick, 1933), Petzold (1966) claimed that by grade three children's ability to synchronize with a periodic stimulus is well established. He also found no significant differences between boys' and girls' accuracy in performing synchronous tapping tasks.

More complex are the findings with regard to tempo. Preschoolers' synchronous tapping has been found to be more accurate at faster tempos (120 to 186 taps per minute, 2.0 to 3.1 taps per second) than at slower tempos (approximately 60 to 90 taps per minute, 1.0 to 1.5 taps per second) (Petzold, 1966; Williams, Sievers, & Hattwick, 1933).

Studies comparing performance of "normal" and "learning disabled" children (Atterbury, 1983; Brunt, 1983; Gilbert, 1983) found that performance was adversely affected by handicap. It is thought that learning disabled children perform better at slower speeds (around 60 taps per minute) than at faster speeds (around 120 taps per minute). Liemohn (1983) also studied the ability of retarded and learning disabled children to tap in synchrony at two tempos (60 and 120 taps per minute). He did not report which of these two speeds resulted in greater accuracy but found that performance at the slower rate correlated more closely with other motor tasks. The importance of this finding for the elementary music teacher is that for learning disabled children, rhythm patterns need to be presented at slower tempos. Separating rhythm from tempo is therefore an important strategy for ensuring performance success.

Tapping in imitation.

Another type of tapping task is that of imitation, where children are required to listen to a pattern and replicate it directly afterwards. In some research the stimulus was tones of various pitches. Other research has utilized patterns of single pitches played on a xylophone, woodblock, or claves. In addition to the factors investigated in synchronous tapping research, meter, subdivided beats, and the influence of pitch come into play. These factors are further complicated by the child having to listen, remember, and then perform without being cued. Petzold has stated that "imitation is relatively simple, requiring no particular musical analysis or thought" (1966, p. 224). Nevertheless, imitative tapping tasks are considered separately in this paper, as they may require different perceptual, cognitive, and memory processes from normative and synchronous tapping tasks.

In imitative tapping, researchers have found that children's performance improves with age, although ceiling effects have been observed for some tasks. Again there is controversy, whether, as Petzold (1963) has claimed, rhythmic ability plateaus around grade three, or whether there is a continuing increase in accuracy (Cox, 1977; Osburn, 1981). No significant differences were found between boys and girls (Cox, 1977; Osburn, 1981; Petzold, 1963).

As might be expected, tempo seems to be a major factor in the accuracy of imitative responses. It is suspected that, as for synchronous tapping and other motor skills (Smoll, 1975), accuracy would be less at extremes of fast and slow tempos. Though much discussed, tempo has not been systematically investigated in children's performance of either simple patterns or more complex dotted rhythms.

Even when the tempo of a stimulus remains the same, children appear to tap their responses faster than the given stimulus (Osburn, 1981). Addi-

tionally, children were observed to accelerate through separate test items as well as throughout the entire test period (Osburn, 1981). A stabilization of tempo might occur if the test items were longer. Smoll (1975) found that 18-year-olds allowed to set their own tempo sped up at first but stabilized after about 30 seconds. The short amount of time allowed children to respond in tests of imitative tapping (e.g., 24 seconds, Kuhn & Gates, 1975; three minutes, Thackray, 1972) may have been too short to allow their tempo to stabilize.

Although meter was not successfully isolated as a variable, both Petzold (1966) and Osburn (1981) observed that children made about twice as many errors in 6/8 as in 2/4 meter. Both researchers stated that it is impossible to determine what accounts for these differences. It may be due to item density (numbers of taps per 6/8 item being greater than for 2/4 items), complexity (numbers of dotted units in the 6/8 being greater than in the 2/4 sections), fatigue (6/8 section being presented after the 2/4 section), or a combination of factors.

Additional aspects that have been touched upon in tapping research include differences in timbre (Petzold, 1966) and use of melodic stimuli contrasted with nonmelodic stimuli. The influence of melodic versus nonmelodic stimuli was investigated by Petzold (1966) and Osburn (1981), and no differences were found by either. Osburn, however, found interaction with other factors, suggesting the need for further study.

Investigation of the effects of culture is only in the preliminary stages. (Igaga & Versey, 1977). In some cultures children begin performing complex rhythms at very early ages (Amoaku, 1984; Nketia, 1974).

Training

Few researchers have reported investigating the effects of practice or training on any kind of children's tapping task (Gilbert, 1983; Groves, 1969; Utley, 1978; Wight, 1937). Some of the studies have presented excellent ideas for teaching and for future research, but the research contains serious problems of methodology. Meaningful comment on the significance of findings in this area is not possible.

Methodological Problems

An exhaustive critique of methodology is beyond the scope of this paper. Many studies have design problems which diminish the possibility of making valid comparisons. Researchers will need to account for methodological problems encountered in studies examining children's rhythmic tapping. These problems include inadequacies in sample size, experimental procedures, stimulus preparation, data collection, statistical analysis, and experimental design.

Inadequate sample size may account for finding no differences. Experimental procedures may feature a distracting experimental environment, confusing instructions, a too short practice period, no opportunity for children to retry items, or inflexible pacing of trial presentations. Stimuli may be subdivided nonmetrically or not repeated enough to be perceived as a pattern. Stimuli may be too short, too difficult, or too easy and they may be presented with insufficient interstimulus intervals and rest periods. Data collection problems include unresponsive tap apparatus as well as questionable data recording, scoring, and reduction procedures. In some research tap duration rather than distance between tap onsets has been used as the dependent variable. Lastly, there remain serious difficulties in basic experimental design and statistical analysis. Experiments have been carried out without taking into account fatigue or serial order effects. Also, incorrect statistical procedures (lacking randomization or counterbalancing) routinely occur.

Summary

It would be useful to replicate some of the quality music research which has been done with children, as well as to integrate the findings with those studying adult musicians and nonmusicians. As Osburn concludes, rhythm pattern research. . . could provide information about children's developing abilities to organize and to recall rhythmic information that cannot be gained using other kinds of tests" (1981, p. 57). At this point findings must remain tentative or inconclusive. The problems remain complex and there is no lack of challenge in this vitally important field. The coming years offer an exciting potential as we define the future focus of research and teaching within the field of music.

References

Annett, M. The growth of manual preference and speed. *British Journal of Psychology*, 1970, *61*(4), 545-558.

Amoaku, W.K. Interview with William Amoaku. *The Orff Echo*, 1984, *17*(1), 721.

Atterbury, B.W. A comparison of rhythm pattern perception and performance in normal and learning-disabled readers, age seven and eight. *Journal of Research in Music Education*, 1983, *31*(4), 259-270.

Bengtsson, I., & Gabrielsson, A. Method for analyzing performance of musical rhythm. *Scandanavian Journal of Psychology*, 1980, *21*, 257-268.

Brunt, D., Magill, R.A., & Eason, R. Distinctions in variability of motor output between learning disabled and normal children. *Perceptual and Motor Skills*, 1983, *57*, 731-734.

Cox, M.O. A descriptive analysis of the response to beat, meter, and rhythm pattern by children in grades one to six. (Doctoral dissertation, The University of Wisconsin-Madison, 1977). *Dissertation Abstracts International*, 1977, *38*, 3353/6A. (University Microfilms No. 77-17818).

Denckla, M.B. Development of speed in repetitive and successive finger-movements in normal children. *Developmental Medicine and Child Neurology,* 1973, *15*(5), 635-645.

Drake, A.H. An experimental study of selected variables in the performance of musical durational notation. *Journal of Research in Music Education,*1968, *16*(4), 329-338.

Gabrielsson, A. Performance and training of musical rhythm. Paper presented at the International Society of Music Education Ninth International Seminar on Research in Music Education, London, 1982.

Gilbert, J.P. An assessment of motor music skill development in young children. *Journal of Research in Music Education,* 1980, *28*(3), 167-175.

Gilbert, J.P. A comparison of the motor music skills of nonhandicapped and learning-disabled children. *Journal of Research in Music Education,* 1983, *31*(2), 147-155.

Groves, W.C. Rhythmic training and its relationship to synchronization of motor-rhythmic responses. *Journal of Research in Music Education,* 1969, *17*(4), 408-417.

Heinlein, C.P. A new method of studying the rhythmic responses of children, together with an evaluation of the method of simple observation. *Journal of Genetic Psychology,* 1929, *36,* 205-228.

Igaga, J.M., & Versey, J. Cultural differences in rhythmic perception. *Psychology of Music,* 1977, *5*(1), 23-37.

Jersild, A.T., & Bienstock, S.F. *A study of the development of rhythm in young children.* New York: Bureau of Publications, Teachers College, Columbia University, 1935.

Kerr, R. Movement control and maturation in elementary-grade children. *Perceptual and Motor Skills,* 1975, *41,* 151-154.

Kinsbourne, M., & McMurray, J. The effect of cerebral dominance on time sharing between speaking and tapping by preschool children. *Child Development,* 1975, *46,* 240-242.

Kuhn, T.L., & Gates, E.E. Effect on notational values, age, and example length on tempo performance accuracy. *Journal of Research in Music Education,* 1975, *23*(3), 203-210.

LaBerge, D. Perceptual and motor schemas in the performance of music. Paper presented at the National Symposium on the Applications of Psychology to the Teaching and Learning of Music, Ann Arbor, Michigan, 1979.

Liemohn, W. Rhythmicity and motor skill. *Perceptual and Motor Skills,* 1983, *57,* 327-331.

Locke, D. Principles of offbeat timing and cross-rhythm in southern Eve dance drumming. *Ethnomusiocology,* 1982, *26*(2), 217-247.

Magill, R.A. *Motor learning: Concepts and applications.* Dubuque, Iowa: Wm. C. Brown, 1981. (see especially pp. 292-294).

Maxwell, J.K. A neuropsychological assessment of cerebral interhemispheric communication during childhood. Unpublished Ph.D. dissertation, Carleton University, Ottawa, Ontario, Canda, 1981.

Nelson, J.A. A preliminary investigation of motor programming in piano performance. Unpublished masters thesis, University of Waterloo, Waterloo, Ontario, Canada, 1982.

Nketia, J.H. *The Music of Africa.* New York: W.W. Norton, 1974.

Osburn, G.R. Measuring children's rhythmic skills using two rhythmic pattern imitation tests. Unpublished masters thesis, University of Washington, 1981.

Petzold, R.G. Auditory perception by children. *Journal of Research in Music Education,* 1969, *17*(1), 82-87.

Petzold, R.G. The development of auditory perception of musical sounds by children in the first six grades. *Journal of Research in Music Education,* 1963, *11*(1), 21-43.

Petzold, R.G. *Auditory perception of musical sounds by children in the first six grades.* Madison, Wisconsin: University of Wisconsin, 1966. Also reported in *Journal of Research in Music Education,* 1969, *17*(1), 82-87.

Ruffer, W.A., Normative data by sex and grades 1 to 10 for four psychomotor tasks. *Perceptual and Motor Skills,* 1985, *60,* 69[illegible]87

Ruffer, W.A., Grapenthin, R.R., Huey, L.A., Patterson, B.J. Comparisons for psychomotor tasks: Grade and sex of secondary school youths. *Perceptual and Motor Skills*, 1985, *60*, 27-30.

Schellekens, J.M.H., Kalverboer, A.F., Scholten, C.A. The micro-structure of tapping movements in children. *Journal of Motor Behavior*, 1984, *16*(1), 20-39.

Shaffer, L.H. Rhythm and timing in skill. *Psychological Review*, 1982, *89*(2), 109-122.

Shaffer, L.H. Performances of Chopin, Bach, and Bartok: Studies in motor programming. *Cognitive Psychology*, 1981, *13*, 326-376.

Sidnell, R.G. Motor learning in music education. Paper presented at the National Symposium on the Applications of Psychology to the Teaching and Learning of Music, Ann Arbor, Michigan, 1979.

Smoll, F.L. Preferred tempo of motor performance: Individual differences in within-individual variability. *Journal of Motor Behavior*, 1975, *7*(4), 259-263.

Smoll, F.L. Preferred tempo in performance of repetitive movements. *Perceptual and Motor Skills*, 1976, *40*, 439-442.

Spohn, C.L. Research in learning rhythms and the implication for music education. *Council for Research in Music Education Bulletin*, 1977, *50*, 62-66.

Spreen, O., & Gaddes, W.H. Developmental norms for 15 neuropsychological tests age 6 to 15. *Cortex*, 1969, *5*(2), 170-190.

Stetson, R.H., & Tuthill, T.E. Measurements of rhythmic unit-groups at different tempos. *Psychological Monographs*, 1923, *32*(145), 41-51.

Thackray, R.M. Rhythmic abilities in children. London: Novello & Co., Ltd., 1972.

Utley, E. The effectiveness of the Shrader TAP system in improving music reading and general reading comprehension. Bellevue, Washington: Temporal Acuity Products, 1978.

Wallace, S.A., Newell, K.M., & Wade, M.G. Decision and response times as a function of movement difficulty in preschool children. *Child Development*, 1978, *49*, 509-512.

Wight, M.G. The effect of training on rhythmic ability and other problems related to rhythm. *Child Development*, 1937, *8*(2), 159-172.

Williams, H.M., Sievers, C.H., & Hattwick, M.S. The measure of musical development. *University of Iowa Studies in Child Welfare*, 1933, *7*(1), 1-191.

Winick, S. *Rhythm: Annotated bibliography*. Metuchen, NJ: The Scarecrow Press, 1974.

Footnotes

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Epilogue

Meeting Robert G.

How vividly I remember the first time I met Robert G. Sidnell. It was at the second Ann Arbor symposium. Carol Scott and I were climbing the stairs of the auditorium when she paused in front of a man of medium stature who had a lively expression and bushy eyebrows. As we stood admiring each others' eyebrows, Carol said, "Robert G. Sidnell, I'd like you to meet Kate." "Oh, yes!" he said. "You wrote me the only fan letter I received in response to my presentation at the last Ann Arbor symposium." Thus began my association with a man who was to serve as friend and mentor for these past few years.

The previous fall I had been searching through the literature on motor skill in music and had come up with only a few unrelated studies. Then my advisor, Jim Carlsen handed me a draft of Sidnell's speech which had been presented at the first Ann Arbor symposium. At last! Here was a report that tied things together. It was succinctly written, and provided a coherent framework for my thoughts. The areas that needed further exploration were clarified and even numbered. There were memorable quotes. And through it all was infused a marvelous sense of humor!

In getting ready for Ann Arbor, I bought a suit, but new shoes would have to wait. Despite the fact that my bassett hound had chewed my only pair of dress shoes, they would have to do. After all, I figured, no one would bother to look at my feet. Besides, they would be under a table or in a darkened auditorium. Face and accessories are what would be noticed. Friends agreed.

Now here it was, the first day of the conference and already I had met the man! To be walking down the aisle of the auditorium as part of this trio was special. We sat down. "Well, here we are!" I thought. "I wonder what the first subject of conversation will be."

Preparing to take notes for the first session, I pulled out a notepad and balanced it on my crossed legs, thus exposing the errant shoe. A moment later, Bob leaned over and whispered in my ear, "Do you have a dog?"

Kate Grieshaber
May 1986

The Bulletin staff expresses appreciation to Dr. Thomas Tunks for his assistance with the special "Robert Sidnell issue."

CRITIQUES

a review

Blaine Edlefsen
University of Illinois

Donald L. Hefner:
The Tradition of the Paris Conservatory School of Oboe Playing with Special Attention to the Influence of Marcel Tabuteau.

Ph.D., Catholic University of America, 1984.
University Microfilms Order No. 8426540

The Study

In 1984 Hefner received a Ph.D. from Catholic University upon completion of a dissertation entitled "The Tradition of the Paris Conservatory School of Oboe Playing with Special Attention to the Influence of Marcel Tabuteau." The dissertation is atypical, incomplete research, and its uniqueness makes scholarly comment difficult. The title provides the only clue to Hefner's intentions; there is no introductory material, i.e., no statement of purpose, no outline of procedures used in the study, and no hint of what the author wanted to accomplish. Thus Hefner could refute any critique by claiming *ex post facto* that any comment or criticism was beyond the scope of the study. Even the organization of the chapters appears to be somewhat random with an un-numbered appendix (as are the chapters) inserted between pages 106-107. This arrangement places the appendix between the chapter on methods and the chapter on instruments.

But even the title is too broad to describe accurately the focus of the study. The title is also ambiguous and indicates that Marcel Tabuteau had a great influence on the Paris Conservatory school of oboe playing. Those who know about Marcel Tabuteau as an oboist in America realize, of course, that his influence was on oboe performance and teaching in this country.

Page iii, "CONTENTS", contains the most detailed information about the dissertation and the thesis of the work. This reviewer has included the

entire table of contents, which Hefner calls "CONTENTS" in his critique, as it appears in the dissertation but with added page numbers and comments which have been bracketed. As Hefner did not include page numbers in his "CONTENTS", the reader is inconvenienced and any joy of reading is lessened.

CONTENTS

I. The *Conservatoire* [un-numbered]
   A. General History [not in the text; footnotes pp. 26-28]
      1. Principal Virtuosi Associated with the *Conservatoire:* Georges Gillet [p. 29; Footnotes p. 61; The colon and Georges Gillet do not appear in the text.]
      2. Methods and Materials. Appendix: Sight Reading Pieces Composed for the *Concours.* 1827-1919 [p. 65. This section begins with the heading *"The Ledger and its Contents."* Part 2 of this section is "The Contest Music", p. 83. A third part is called "The Sight Reading Pieces", p. 102. "FOOTNOTES" to the "Methods and Materials" section are on pages 105 and 106. Beginning after page 106 and between the numbered page 107, is a 101 page appendix (not so labelled in the text) of the sight reading pieces. The sight reading pieces are not catalogued and are not included in the Bibliography.]
      3. The Instruments [p. 107 with footnotes on pages 133 and 134.]
      4. Conclusion [p. 135, with one footnote on p. 138.]
II. Influence of the *Conservatoire* in the United States [This title appears centered on a separate un-numbered page between pages 138 and 139.]
   A. French Oboists in the United States: Marcel Tabuteau [p. 139; Footnotes, p. 157.]
   B. Teaching at the Curtis Institute [This title does not appear in the text.]
      1. Fundamentals: "A Beautiful Tone Emission" [p. 158; Footnotes, p. 176.]
      2. The Ensemble Classes [p. 178; Footnotes, p. 187.]
      3. Phrasing and Interpretation: Meter, Phrasing, Prose, Images, Notation [p. 198; Footnotes, p. 222. Beginning on page 211 is a rather extended and important section called "In the Beginning was the Upbeat."]
      4. Summary [p. 226. The Bibliography is on pages 228-231.]

"CONTENTS" is the only index in the dissertation. The listing of other materials in the work such as photographs, musical examples, and "Illustrations", traditional practice in doctoral dissertations and scholarly works, would have been helpful. Besides the 101 pages of "The Sightreading Pieces," at least two other pages in the main body of the dissertation are not numbered.

The body of the dissertation begins with a history of the Paris Conservatory. Hefner begins with the establishment of *"L'École Royale de Chant,* in 1784, [the school] which would ultimately become the great Conservatory of Paris" (p. 1). The history is interesting, but confusingly, written. The author's story is difficult to follow partially because of the many changes in the names of the forerunners of the Conservatory which were very closely associated with the complicated political history of France. Hefner's history stops with 1920. Hefner states: "Since the final chronological point of the present paper has been reached (the retirement of Georges Gillet took

place in 1919), no further attempt will be made to describe the events that took place since then. The following chapters will focus more narrowly on the subject" (p. 24).

After the General History section, a rather large section of the dissertation follows. In the "CONTENTS" this large section is entitled "The Teaching of the Oboe." This title does not appear in the text, however, and the section begins with the title, "Principal Oboe Virtuosi Associated with the *Conservatoire: Georges Gillet.*" The early portion of this section lists, in chronological order, the professors who were associated with the schools, institutes and conservatories loosely referred to as the *"Conservatoire."* The first chronological reference to the term *Conservatoire* apparently occurs on August 3, 1795, when the *L'École royale* and the *Institute National* were eliminated. The artists who taught there were assimilated into one institution called the *Conservatoire de Musique* with Bernard Sarette in charge. Also the music section of the *Garde Nationale* and the *L'École de Chant* of the Faubourg Poissonniere were incorporated into the *Conservatoire.*

The listing of Georges Gillet as professor at the Conservatory in 1881, initiates a rather lengthy discussion about him. There seems to be no doubt that Georges Gillet was considered the greatest oboe performer and teacher who had lived up to that point in time. There remain some critics today who feel that he was the best oboist who has ever lived. In any case, oboists need to learn about this man who taught at the Paris Conservatory for 38 years (1881-1919). The material on G. Gillet is interesting and gives the reader a good view of him, both in his somewhat rakish early personal life, and in his life as a performer and teacher. Of the approximately 17 pages devoted to Georges Gillet, however, nearly 14 are quotations from assorted sources. While these pages contain much material which is interesting and useful, much of the material in these quotations could be edited. Some of the quotes stand unfootnoted. In any case, the length of many quotations is often unnecessary and represents a lack of the terse and original writing that should be required and is most useful in a doctoral dissertation.

The "METHODS AND MATERIALS" section begins with "The Ledger and its Contents." The ledger listed "methods and study materials for each instrument, as well as, solo, ensemble, and orchestral music owned (and presumably used) by the *Conservatoire*" at the time G. Gillet was a student. Part two of this section is "The Contest Music" (page 83) and describes the music written for the *Concours* by Charles Colin, the teacher of G. Gillet. Other works described in this section are Georges Gillet's *Études pour l'enseignement superieur du hautbois,* published in 1909 by Alphonse Leduc. Also described is the *Méthode de Travail* by Fernand Gillet which explains the way G. Gillet's *Études* should be practiced. The three volume work, *La Technique du Hautbois par l'Étude Rationelle des Gammes,* by Louis Bleuzet

is also fully described by Hefner. Bleuzet's is the only pedagogical work mentioned which has been written since the retirement of Georges Gillet. Louis Bleuzet succeeded G. Gillet as Professor of Oboe at the Paris Conservatory. The next part of this section is "The Sightreading Pieces," followed by the 101 page appendix, which, as noted, is not labeled as such and not paginated or catalogued.

The next section of the dissertation, "THE INSTRUMENTS," is devoted to the history of the oboe and its development. This section includes an enormous four-page quotation from Nora Post's article, "F. Loree: Interview with Alain and Robert de Gourdon, July 1, 1982," from *The Double Reed* (5, Winter, 1982): 30-35). The rest of the history of the oboe is found elsewhere, such as in *The Oboe* by Phillip Bate. The length of this section could have been greatly reduced had Hefner referred the reader to the Bate work and used only the material pertinent to his dissertation.

The "CONCLUSION" is, except for the first short paragraph, a long quotation from an encyclopedia article by Theodore Dubois, the Director of the Paris Conservatory at the time Marcel Tabuteau won the First Prize, i.e., 1904. The quotation of Dubois does contain pertinent material, but this writer's personal preference continues to be to eliminate these very long quotations, and as a research director, require his doctoral students to put concluding statements, for the most part, in their own words. (The quote begins on page 135 and ends with the footnote on page 138.) Throughout this dissertation a number of long quotations have been used which fill space but do not contain specific information pertinent to the topic at hand, and often do not adequately reflect the author's original thinking. To be able to gather the essence of a considerable body of material from varied sources and to put the ideas into one's own words is an important task of a researcher.

Documentation of the "Influence of the *Conservatoire* in the United States" is the purpose of the second part of Hefner's dissertation. The title appears centered on a separate page located between pages 138 and 139. The first section of this second part is entitled "FRENCH OBOISTS IN THE UNITED STATES." This section contains data closer to what one infers from the dissertation title. In this section material directly related to the dissertation's objective can be found. The names, not only of famous Frenchmen who came to the United States to perform in top American orchestras, but also of students of Marcel Tabuteau whom Hefner calls "First Generation" (pre-1945) and "Second Generation" (post-1945) are listed. Hefner also uses the term "Grand-students" to refer to those people who studied with students of Marcel Tabuteau. The list of Tabuteau's students is, unfortunately, incomplete; this writer is personally acquainted with several Tabuteau students who are not mentioned in this section or elsewhere in the dissertation. One has to wonder whether or not Hefner attempted to obtain a

complete roster of Tabuteau students from the Curtis Institute. In any case, Hefner would have made a greater contribution if the list were more complete and if he had described what those students who once studied with Tabuteau are now doing. This section remains an interesting one, and provides a limited number of names of professional oboists. The names of very few students of other French professional oboists are mentioned. The section also documents Tabuteau's retirement from the Philadelphia Orchestra and the Curtis Institute in 1954. He died in Nice in 1966. An interesting paragraph written by Hefner (page 154) describes one person's view of Tabuteau's teaching.

> One person close to the Institute for many years used the word "sadistic" to describe Tabuteau's teaching methods to this writer. There was some truth in that, but it was tempered by two things: first was the fact of the brilliance and clarity of his teaching, and second, that the master was deliberately trying to prepare his students for the extremely competetive world of orchestral playing. The list of his successful students is ample testimony to his effectiveness. He often said, "If you can play for me, you can play for anyone."

An expanded section on the psychological foundation of Tabuteau's teaching would have been a very useful and interesting part of any research on the great master.

The next part of the dissertation which begins on page 158, is called "FUNDAMENTALS," and has several subdivisions: "'A Beautiful Tone Emission'," "Position," and "Breathing, Embrochure, Articulation." Tabuteau believed that sound was the most important element of one's playing. He stressed it in every lesson which began with "drives." Then came the scales, and then etudes by Barret or Ferling. He also emphasized playing on the end of the reed, varied tone colors and articulations, and light reeds.

The next section, which begins on page 178, is entitled "THE ENSEMBLE CLASSES." Hefner describes the classes, tells some interesting stories about Tabuteau's conduct of the classes, and discusses the valuable music lessons imparted to the many students who participated in the classes. A picture of Tabuteau is found on page 188.

The next section, "PHRASING AND INTERPRETATION," includes the subsections: "*Phrasing: 'You must pay with the notes'*," "*Prose*," "*Images*," "*'In the Beginning was the Upbeat'*," and "*Notation: trompe-l'oeil.*"

Under the "Phrasing" subsection, Hefner describes "arsis" and "thesis" as used by Tabuteau. Tabuteau used bouncing rubber ball analogies to help explain these two concepts. The very important "up" (tension) and "down" (resolution) terms are also defined here. Hefner describes Tabuteau's number system as follows (p. 197 and 198):

> Tabuteau's "numbers system," the subject of so much discussion, was a way to more precisely chart the rise in intensity of a phrase and to indicate the smallest elements (he called them 'syllables') toward the peak and away again.
>
> This system was, in Tabuteau's own words, subjective and applied inconsistently. This writer's impression was that it would be applied only to phrases where the groupings were relatively clear and simple. When the numbers progress, that signifies an "up-down" inflection. When the number repeats, it means that these adjacent notes are unrelated. When the phrase is progressing toward its climax, the "down" inflexion has more weight than the "up".

The *"Prose"* and *"Images"* parts are somewhat related. In *"Images"* Hefner says that "Tabuteau's teaching was rich in imaginative comparisons to occurrences in the physical world." Tabuteau compared the seagull's swoop, disappearing smoke, falling leaves, and the breeze, to musical gestures (p. 201). Hefner talks about how one interprets a phrase by responding to what the performer "senses and preceives *in* the music."

In the subsection '"In the Beginning was the Upbeat'," Hefner's comments are useful and well written. The research uses quotations of Tabuteau taken from a recording. Unless the reader is familiar with the material and the jargon used on the recording, the quotations would be difficult if not impossible to understand.

"Notation: trompe-l'oeil" contains a discussion on articulation contrasted with phrasing. Quotations from the writings of Herman Keller are used, and Hefner concludes that, in the example given (the beginning of the Piano Concerto in A Major, K. 488, movement I),

> the actual grouping of the figures in the sense of the phrase is, of course, in direct contradiction to the appearance of the notation. Occasional attempts have been made to revise the notation of the music so that it more clearly shows the relationship of the notes, but the old system has prevailed. Students must be taught to feel the real relationship with in the music. This was Tabuteau's supreme gift to his students (p. 220).

The last sentence contains the only reference to Tabuteau in the entire subsection, pp. 217-220. On page 221 is another picture of Tabuteau. The footnotes for this rather long section, "PHRASING AND INTERPRETATION," appear on pages 222-225.

The "SUMMARY" is a page and two lines long (pp. 226 and 227). In it Hefner states that Marcel Tabuteau carried on the traditions of the Paris Conservatory. Hefner's last paragraph is:

> Marcel Tabuteau never failed to express his indebtedness to his great teacher, but he took from him another quality – the willingness to innovate. It is Tabuteau's adaptation of the tradition of the *Conservatoire* which so thoroughly influences American orchestral playing today.

Hefner chose an important character in the lives of American oboists to be the focus of his dissertation. But in perspective, one realizes that Marcel Tabuteau was in a unique position to have such a remarkable influence. The students who are accepted into the Curtis Institute enter tuition free and are exceptionally fine young performers. The situation for both teacher and student can hardly be more suitable as a preparatory environment for orchestral playing.

Readers would have a much better perspective on the teaching abilities of Tabuteau if Hefner would have given us more information about the oboe students who entered the Curtis Institute to study with Tabuteau. Useful information might be: How many entered? How many graduated and who are these individuals? What are they doing now? What do his students say about Tabuteau as a person and teacher?

As far as Hefner's writing is concerned, this reviewer believes that the format of the dissertation should have been improved. The likelihood of Hefner's dissertation passing the traditional "format check" at the graduate college of most institutions would be almost nil. Not only was the table of contents incomplete and not paginated, the appendix of the sight reading pieces appears in a rather strange place in the body of the text, both unpaginated and uncataloged. There is great inconsistency in the way the headings of the various sections are laid out in the work. Some headings appear in the text but not in the table of contents and vice versa.

Hefner frequently uses long quotations that should be reduced or the ideas summarized. When a writer is working with considerable material from a variety of sources, putting ideas together and organizing the data for a concise presentation is the recommended course of action. Some of Hefner's material might be considered padding. The section on the history of the Paris Conservatory, for example, is interesting to read, but confusing to follow through the maze of dates, name changes, personnel, and political events.

There are few technical inaccuracies in the dissertation. Hefner's material on the transfer of teaching oboe at the Paris Conservatory from Georges Gillet to his highly favored student, Louis Bleuzet, is of interest. Louis Bleuzet was on a tour in the United States at the time he officially heard that Gillet was retiring. Bleuzet, anxious to apply for the position, immediately wrote a letter (which Hefner calls "Louis Bleuzet's Acceptance Letter," page 52) to Gabriel Faure, the Director of the Conservatory saying, ". . .I wanted to let you know that I would be delighted and honored. . . *to apply* [emphasis mine] for the succession to my Master's position." Earlier, page 52, Hefner states, in reference to Bleuzet's letter: ". . .Bleuzet's *acceptance*, [emphasis mine] [was] curiously from the McCoy Hotel in El Paso, Texas, where Bleuzet was on an American tour with the *Société des Con-*

certs." Bleuzet's own words, of course, indicate that his letter from Texas was a letter of application and not one of acceptance.

A few other inaccuracies occur, e.g., the oboe methods of Brod and Barret. On page 69, Hefner indicates that the Méthode of Henri Brod does not include an accompanying bass line to the oboe line. This reviewer's copy of the *Méthode de Hautbois de Brod 1799-1859 Nouvelle edition revue et modifiée par M. Gillet, Professeur au Conservatoire* published by Henry Lemoine & Cie, Brusselles, [no date], does have a bass part in the 40 *Leçons* and the Six Easy Sonatas. On page 95 of this *Méthode* is a statement that the original did have a bass part. The publication date of the "new edition" of the Barret Oboe Method is 1948, not 1936, as Hefner states in Footnote 4, page 105.

Hefner has portrayed the influence which the Paris Conservatory oboe players have had on oboe playing in the United States. The individual who Hefner believes had the greatest influence was, of course, Marcel Tabuteau. He has had a remarkable and lasting influence, not only on oboe performance, but also on the teaching of oboe in the United States. It is regretable that Tabuteau did not take the time to leave us with a book on his methods and philosophies. The oral teachings which he left us will linger, but a well written document by the master would have helped immeasureably. One has only to compare the great books which have been written by the French flutist, Marcel Moyse, and realize what a great influence his works have had on the teaching and the expressive playing of the flute.

Finally, to Professor Hefner, this writer extends his thanks for writing on a very important and useful topic. To him and others who may read this dissertation review, may the comments lead to even greater scholarly endeavors as we progress in our course of understanding the world and its people.

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Rebuttal

I am very pleased that the reviewer found the contents of my dissertation "very interesting", "a good view of (G. Gillet)", "valuable", "useful and well written", that "very important . . . terms are defined", and that it is a "very important and useful topic".

Some questions were raised with regard to format and procedure, however; I would like to respond to some of these points as follows:

The reviewer remarks that there is "no statement of purpose" and "no hint of what the author wanted to accomplish". If the dissertation abstract had been included in the review, as I believe is common practice, those problems would have been solved.

The comment is made that "Beginning after page 106 . . . is a 101 page appendix (not labelled so in the text)". In fact this appendix is labelled so and described on page 102 of the text.

The criticism is made that the "section on the history of the Paris Conservatory . . . is very interesting to read but very confusing to follow through the maze of dates, names, changes, personnel, political events, and so on. Much of this material might have been much better presented, and undoubtedly could have been condensed to allow the reader greater coherency with far less effort". French history was complicated after the revolution and that directly and repeatedly affected the Conservatory. I feel that it would have been the height of presumptuousness for me to try to simplify it, and that this would not convey the picture of the turbulent early history of the Conservatory that it was my purpose to try to project.

And elsewhere, "The list of Tabuteau's students is incomplete . . . Hefner would have made a greater contribution if the list were complete and if he had described what those students . . . are now doing". The list as it exists is described in the text as "necessarily incomplete". Such a complete list, while undoubtedly interesting to compile, would not be germane to the present topic and would indeed constitute "padding".

And finally, "the full quotations are not necessary and represent a lack of the terse kind of original writing that should be required and is most useful in a doctoral dissertation of this nature". I deliberately tried to find everything written *by* Tabuteau or written *about* him by responsible people and to include them *whenever* pertinent to preserve the objectivity of the study, especially in the light of my close personal contact with the primary subject.

This reviewer concludes that "Hefner has given us a picture of the influence which the Paris Conservatory oboe players have had on oboe playing in the United States". That was the exact purpose of the dissertation. If I have succeeded in doing that, then the tremendous amount of time and effort that went into this study will indeed have been well spent.

Donald L. Hefner
Brookmont, Maryland

Books Received

and available for review

Burnett, Michael. (1985). **Jazz** Oxford: Oxford University Press, 48 pp.

Chamberlin, Hal. (1985). **Musical Applications of Microprocessors** Second edition. Berkeley, California: Hayden Book Company, 802 pp.

Choksy, Lois, Robert M. Abrahamson, Avon E. Gillespie, and David Woods. (1986). **Teaching Music in The Twentieth Century** Englewood Cliffs, N.J.: Prentice-Hall, Inc., 343 pp.

Cox, Maureen. (1986). **The Child's Point of View: The Development of Cognition and Language** New York: St. Martin's Press, 192 pp.

Ellis, Catherine J. (1985). **Aboriginal Music: Education for Living** New York: University of Queensland Press, 236 pp.

Goldman, Alvin I. (1986). **Epistemology and Cognition** Cambridge, Massachusetts: Harvard University Press, 437 pp.

Howell, Peter, Ian Cross, and Robert West (editors). (1985). **Musical Structure and Cognition** New York: Academic Press, 338 pp.

Katz, Ruth. (1986). **Divining The Powers of Music: Aesthetic Theory and The Origins of Opera** New York: Pendragon Press, 224 pp.

Kelley, David. (1986). **The Evidence of The Senses: A Realist Theory of Perception** Baton Rouge, Louisiana: Louisiana State University Press, 262 pp.

Koepplin, Leslie W. and David A. Wilson (editors). (1985). **The Future of State Universities: Issues in Teaching, Research, and Public Service** New Brunswick, N.J.: Rutgers University Press, 309 pp.

Lust, Patricia. (1985). **American Vocal Chamber Music, 1945-1980: An Annotated Bibliography** Westport, Connecticut: Greenwood Press 273 pp.

Pielke, Robert G. (1986). **You Say You Want a Revolution: Rock Music in American Culture** Chicago: Nelson-Hall Publishers, 270 pp.

Roads, Curtis and John Straun. (1985). **Foundations of Computer Music** Cambridge, Mass: The M.I.T. Press, 712 pp.

Ryan, John. (1985). **The Production of Culture in The Music Industry: The ASCAP-BMI Controversy** Washington, D.C.: University Press of America, 159 pp.

Sarup, Madan. (1986). **The Politics of Multiracial Education** London: Routledge & Kegan Paul, 140 pp.

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